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CONSUMERS' RESEARCH Bulletin

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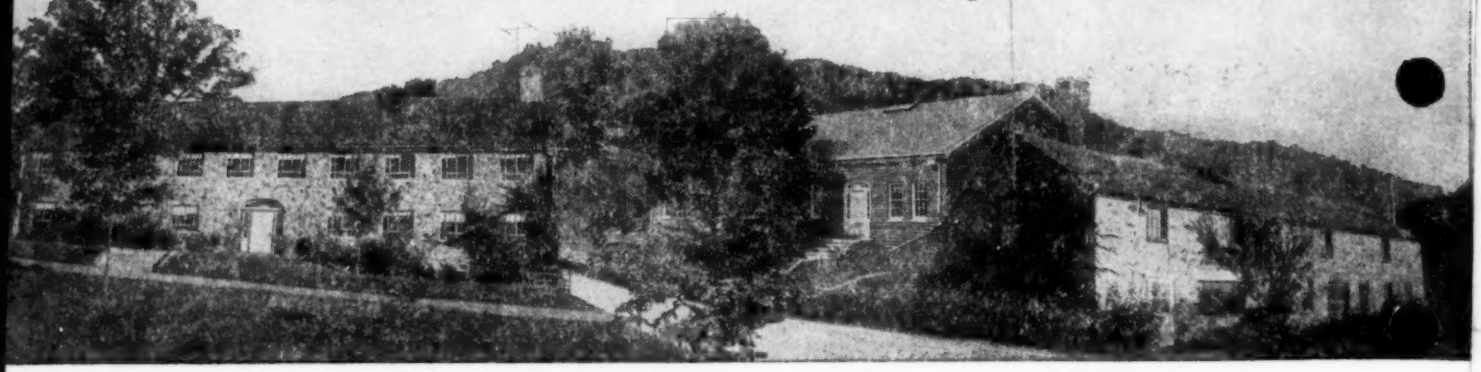
CONSUMERS' RESEARCH



Vol. 18 • No. 4 **BULLETIN** October 1946

Off the Editor's Chest

BUYERS' STRIKES, which had been hinted at cautiously in the trade and consumer press last spring, made front-page news in July during the peak of the activities of various "pressure groups" for revival of OPA controls. The outstanding proponent of buyers' strikes and picketing of stores was Walter P. Reuther, president of the United Automobile Workers Union, CIO, who announced as his objective "the organization in every American city of a central consumers' committee with the UAW leadership of religious, civic, community and other labor groups" and promised "a buyers' strike such as this country has never known."

CIO and cooperating groups paraded with banners, baby carriages, and barrels in front of butcher shops and markets demanding lower prices, and in Detroit UAW members took time off from their work to attend a protest parade. Picketers' pictures and slogans made front-page news and were reproduced in the weekly news magazines. Just what has been achieved is a matter for debate. Small establishments in neighborhood areas appear to have been affected and food prices were down in some sections, but on the whole about the only thing accomplished was the revival of some elements of the OPA price-control system. Department stores claimed that they were not affected by the demonstrations. Indeed, department store sales, in dollar volume, increased over those of the same period last year. Moreover, the picketing and demonstrations had their obvious limits, for as one housewife put it, "So far I haven't heard of anyone coming up with a substitute for food."

While many a housewife may have hoped that the mere parading before a butcher shop or grocery store would bring her food bill down to its prewar or even last year's level, most women apparently realized that it would take far more than clamor and picketing by labor unions to accomplish that result. As a matter of fact, consumers would appear to be justified in withholding their support from a movement headed by a man who called out his union on strike at a time when new automobiles were urgently needed by many millions of American citizens to replace the cars worn out during the long wartime suspension of civilian production. It has been estimated that the auto workers' strike deprived the public of approximately 50,000 new automobiles, and 175,000 striking workers lost some fifty million dollars in wages. Looking at the matter from the standpoint of the labor forces of the automobile factories, according to an estimate by Prof. Sumner Slichter, eminent labor economist, it will be 1948 before the striking workers are as well off as they would have been if they had not gone on strike, and not until *1953* will they be as well off as they would have been if they had accepted the company's offer of 10 cents an hour wage increase.

Consumers generally are wise to distrust the kind of leadership that pretends to speak for consumers when it actually and obviously represents an opposing interest. As a matter of fact, one newsletter suggests that labor leaders are con-

(Continued on page 24)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, Helen P. Alleman A. R. Greenleaf, and Charles L. Bernier. Editorial Assistants: Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality, C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; 45, 46—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least a month before it is to take effect, accompanying your notice with statement of your old address with name in full. At least three weeks' notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

¶*CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.*

★★★For a brief cumulative index of 1946 BULLETINS preceding this issue, see page 26.

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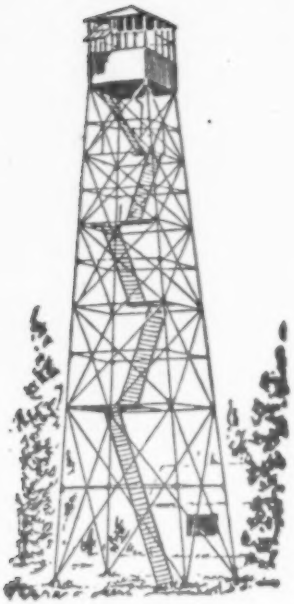


The Consumers' Observation Post

THOSE NEW HOUSES, that Housing Expediter Wyatt is trying to get so many more of, may turn out to be a political boomerang. Made with green lumber, poor quality fixtures and plumbing, too few nails, and hasty workmanship, many of those recently built are already beginning to show signs of disintegration. According to a survey by The Wall Street Journal, the green lumber used in thousands of new homes is expected to bring considerable woe to their occupants in cases where the houses are yet to be subjected to winter weather for the first time. One of the chief complaints is that boards buckle and warp, requiring caulking of crevices; roof boards curl and pull out what few nails have been put in them; floors sag. To top it all, another survey reports that small houses are now selling at an average price 65 percent above 1940 figures. From the consumer's point of view, it would seem decidedly wiser to build fewer houses of better quality than just to aim at a record measured by total number of houses begun during the year.

* * *

THE BODIES of the new Plymouth and also Ford cars appear to be made from thinner sheets of steel than was the case with pre-war cars of the same make. The body panels are so thin in some cases that they can be pushed in with the fingers along the body side near the doors. One skilled observer suggests that the shortage of steel and the heavy demand for new cars is forcing the manufacturers to use nearly anything from which automobile bodies can be stamped with some degree of success.

* * *

RAW MILK has been discovered to have an important new food factor that is lost when the product is pasteurized, according to researches by Dr. Rosalind Wulzen at Oregon State College. It appears that this new factor is associated with the cream rather than with what are called the "non-fat milk solids." Guinea pigs fed on a high calcium diet lacking in this factor developed arterial deposits of calcareous material, unorganized deposits of calcium salts in soft tissues and leg bones, and stiffness of the joints. The discovery is being studied closely to find a possible connection between a deficiency of the newly discovered substance and arthritis in human beings. One journal expresses the fear that the studies may form the basis for an attack on the practice of pasteurizing milk.

* * *

SEDATIVES are becoming such a habit with so many people who can't sleep without them, or think they can't, that it is now reported often to be necessary for some to take a stimulant the next day "to avoid rigor mortis," as one Detroit physician put it. It appears that a sedative taken at night frequently leaves a "hangover" the next day and "that tired feeling," as if the person taking it had not slept at all. The suggestion is made that sedatives should not be prescribed too often for minor insomnia, but should be considered as narcotics and dispensed accordingly.

* * *

WASHING MACHINES and some other important household appliances are slowly becoming available here and there in limited numbers, but difficulties continue to beset manufacturers throughout the electrical appliance industry. The four chief obstacles to increased production, in the opinion of one trade journal, are strikes, pricing problems (which means OPA, primarily), lack of component parts, and shortages of raw materials. Hardest hit are the producers

of electric motors, non-ferrous metals, and iron and steel castings. An electric refrigerator or washing machine without its motor is of very little use to anyone, but that's the way the manufacturers are having to make many of them, nowadays.

* * *

COTTONSEED OIL, as CR has pointed out from time to time, is a rather common cause of allergy. In a sensitive person, it produces severe symptoms, difficult to treat. It has now been discovered that smoked meats will keep better if treated with raw cottonseed oil. Smoked bacon and ham, for example, are reported to keep four to five times longer when dipped in the oil than when left in the untreated state. If this process becomes generally used, people with a cottonseed allergy (and many people are highly susceptible to cottonseed products) will have to cross two more foods off their list of cottonseed-free items.

* * *

HOUSE PAINT that will be the equal of the pre-war product will be considerably higher in price--if there is to be any. It appears that the price of linseed oil, one of its most important components, is double its 1941 price. Zinc and white lead, according to The Wall Street Journal, are up 40 percent. Containers are up 10 percent. It is estimated that a gallon of house paint retailing at $3.50 before the war would sell for $4.60 to $5 if the manufacturer were to receive his normal margin of profit. Many manufacturers are reported to be concentrating on enamels and interior finishes, on which there are better profit margins.

* * *

THE SALE OF SURPLUS WAR COMMODITIES has been so tied up by red tape and delay in deliveries that the War Assets Administration is trying to cook up some scheme by which to revive retailers' interest, reports Men's Wear. The W.A.A. is said to be considering inaugurating a series of regional sales conferences for wholesalers and retailers to enlist their participation in the program. Government bureaucrats love to call conferences, but it would appear that what is needed is not conferences, but the devising of quick and easy ways, with a minimum of the red tape that has beset all surplus sales to date, by which prospective purchasers can buy the goods that the government wants to dispose of.

* * *

SUBSTANDARD MERCHANDISE is to be eliminated as rapidly as possible from store counters and shelves. According to The New York Times, one large buying syndicate has ordered drastic reductions in price of low quality and unwanted merchandise to get rid of it, and buyers have been ordered to cancel orders for merchandise that is overdue or of low grade. The hope is expressed that retailers will begin to raise their buying standards. There is some fear, according to another account, that consumer demand will also slacken as prices continue to mount.

* * *

RISING PRICES have required revision of plans of the manufacturers of television sets. One company which announced last spring that it would bring out a table model to sell for $100, now prices its set at $169.95. This has occasioned no surprise in the trade, for technically trained men in the field scoffed at the company's announced low price as being quite impossible of achievement in the light of manufacturing problems and the present state of development in the television field. Still another manufacturer who had planned to bring out a television set at $200 is now considering something in the neighborhood of $325.

* * *

THE SCARCITY OF KITCHEN UTENSILS has made offers of various door-to-door salesmen selling stainless steelware unusually attractive. Some of this ware, however, according to information from the Better Business Bureau of Detroit, has been found to be quite unsatisfactory; it has become rusted or stained in use, and one firm, when pressure was brought upon it to afford due redress to complaining purchasers, offered to make replacements after the war (or after normal production was resumed), provided customers in the meantime paid 15¢ rental per month for each item to be replaced. This firm also had a "future

(The continuation of this section is on page 29)

Test of Three Home Freezers

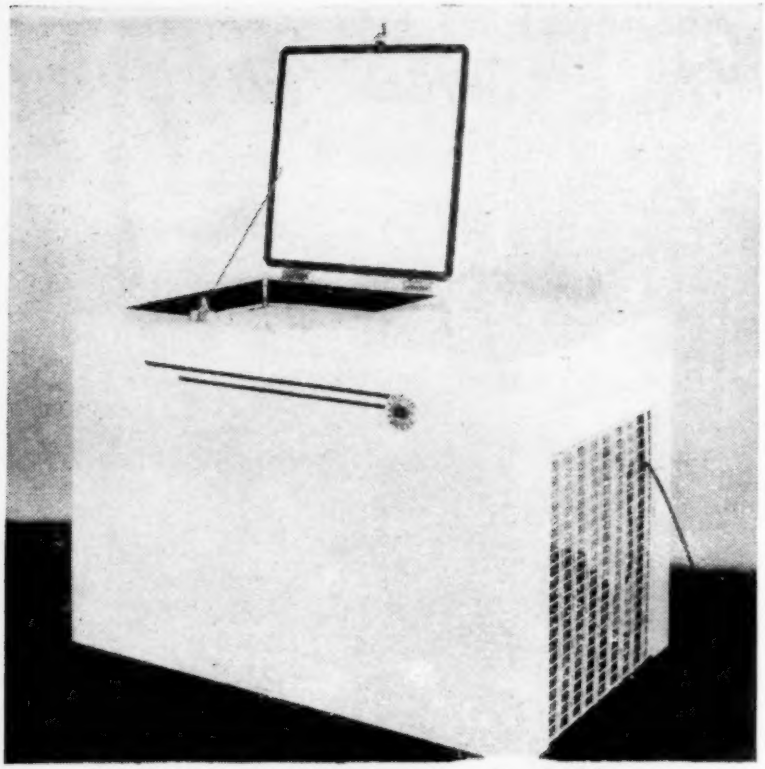
THE accompanying article is a brief report on three food freezers on which tests for CR have just been completed. This is a subject in which many of our readers have been interested, and tests are being conducted by CR as rapidly as freezers of well-known makes that are normally in wide distribution can be obtained. As has been clearly brought out in articles in our May and July 1946 BULLETINS, there is a great deal of difference between an announcement of an item in advertisements or catalogs and the actual availability of the appliance for purchase. This has been strikingly true of food freezers. Our average reader apparently assumes from announcements in mail-order catalogs and elsewhere, and the occasional freezer he sees in a show window or a department store housewares department, that he can buy one as soon as he makes up his mind which one he wants. Actually he can do nothing of the kind. There are very few that can actually be bought, and many of those that can be purchased are not standard items made by responsible manufacturers, but just something thrown together by a newcomer to the business for a quick profit by sales to customers who won't wait for the well-known makes to be available. However, in late August an effort was made to purchase a newly announced food freezer offered by a big New York department store as available for immediate delivery; the intending customer, buying for CR, was blandly informed that he could leave his order, and they might be able to fill it after October 15.

The *Deepfreeze* frozen food storage unit or food freezer.

There is much of importance to be said about food freezers and their efficient use by the consumer, but as the consumer's immediate need is to know something about the performance of those that can actually be bought at this time, we shall, with this brief preliminary, proceed at once to discussion of CR's tests and its findings, and leave other topics for discussion in later articles.

Food storage for any considerable period of time, say, six months to a year, under proper conditions calls for a temperature of 0°F or lower. For short-time storage, higher temperatures, with correspondingly reduced costs of operation of the box, may be used: 10°F will serve for food stored two or three months; 20°F for storage for a week or two. (These are only general principles, and qualifications too numerous to detail here are required in respect to conditions of storage for certain food materials.)

It is often desirable to know the weight of food that can be stored in a given net volume of food-freezer space. According to one authority, uniform-sized packages of chopped meat, or fruits in syrup, give a loading capacity of about 40 lb. per cu. ft.; miscellaneous meats in family-size cuts run 30 lb. to 35 lb. per cu. ft.; and assorted packages including fruits, vegetables, and miscellaneous meat cuts, 25 lb. to 30 lb. per cu. ft.



The *Frigid Freeze* frozen food storage unit or food freezer.

* * *

In general, CR's test procedure followed the practice set down by a publication of the National Electrical Manufacturers Association. The freezers, with lids removed, were allowed to stand in a room at a constant temperature of 90°F for at least 48 hours in order to bring all parts to the temperature of the room. The lids were then replaced, the units plugged into the power supply and the time and energy required to lower the temperatures to stable values in the respective freezers were then determined. Results of this type of test, known as a "pull-down test," give a measure of the refrigerating capacity of the unit.

The standard procedure for the *no-load test* calls for three tests at a room temperature of 90°F, one with the control set to give an average temperature of 0°F in the cabinet, the second with the control set to give a slightly higher temperature, and the third with the control set to give a temperature slightly below zero. Following this procedure was practicable only for the *Bishop* freezer, as the *Deepfreeze* was not equipped with a temperature control that was marked in a way to permit the user to predetermine the temperature in the storage chamber; the *Frigid Freeze*, on the other hand, was unable to produce temperatures as low as 0°F at a 90°F room temperature, although the motor ran continuously. Additional tests were made of all three freezers with different amounts of ice in the storage compartments, to see if presence of stored food altered temperature distribution or increased energy consumption.

Resistance thermometers for measuring air temperatures were located on the vertical center lines of the storage compartments. Temperatures were taken at points 1½ inches below safe storage height (which is from 2 to 3 inches below the lower surface of the lid), at mid-height, and 1 inch above the bottom of the compartments. The manufacturer of the *Bishop*, upon inquiry, indicated that food should not be stored above the level of the top of the cooling plates; but the manufacturers of the *Deepfreeze* and the *Frigid Freeze* did not indicate by correspondence when requested to do so, what they considered to be the top limit for safe storage in their freezers. Contrary to common belief, temperatures inside the storage compartments are very far from uniform, and *there may be a difference of as much as 30° F between temperatures at the top and bottom of the storage space.* The nature and extent of this variation are shown in the diagram of Figure 1, where temperatures measured at various distances below the lids of the freezers are plotted. The results shown in this curve are of great importance to everyone using the food freezer, as it was clearly indicated that foods which are especially susceptible to loss of quality with time (or which in some cases—as with ice cream—are required to remain at a low temperature in order to have a stiff consistency) must be stored as near as possible to the bottom of the box.

Load Tests

Study of the performance of the freezers "under load" (corresponding to what the freezer must do in freezing food which is put in warm or at room

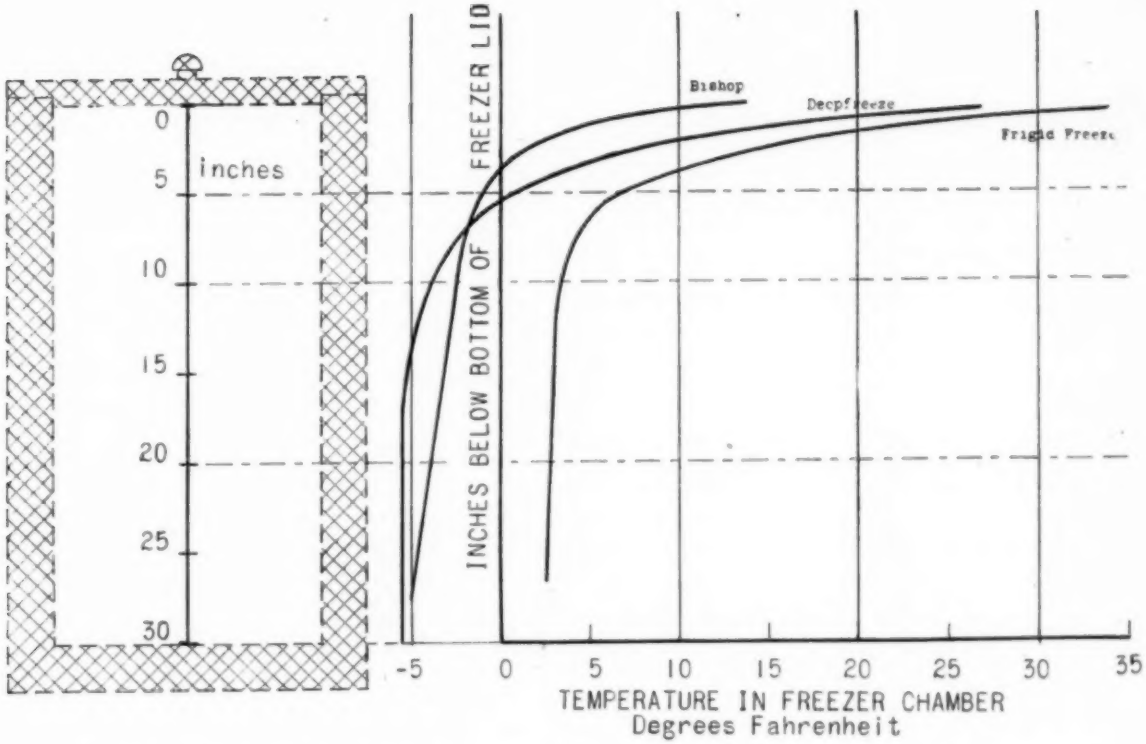


Figure 1—The curves show the great variation of temperature with distance below top of the freezer, in no-load test, for each of the three freezers tested.

temperature) was made by inserting into the storage chambers a number of standard 2-quart closed wax paper containers, each filled with water at 90°F to within an inch of the top and containing 3½ lb. of water each. The loads in each freezer were adjusted to be reasonably comparable on the basis of the number of cubic feet of effective storage space available.

When the first load was completely frozen, another test was made by introducing various numbers of containers filled with water at 90°F into the storage compartments, which already contained quantities of frozen (ice-filled) containers.

A very practical problem for many users of food freezers, especially those living in country districts, is what would happen to the food stored in the event of a long interruption of electric power supply. This condition was studied by *warm-up tests* with the freezers loaded with ice, the switch being open and the temperatures allowed to rise over a three-day period.

Cost of operation figures given in the listings are based on data obtained under "no load" with room temperature of 90°. This was considered equivalent to a freezer running in a room whose temperature would range from 70° to 90°F during the course of a day, with food at room temperature being inserted at intervals. Operating costs, figured at a kilowatt-hour rate of 4c, will be somewhat high for many users. On the other hand, the average rate paid by ultimate consumers for home use of electric current falls between 3c and 4c per kilowatt-hour throughout the country. The even figure of 4c an hour has been chosen because it is close to an average value and because of the convenience with which the cost of operation of a freezer using electricity at a different rate per kilowatt-hour can be computed. It will often be the case that the addition of a freezer to the household load will bring the net rate down, on a sliding-scale system; in any case, your own power company can tell you what rate should be figured in your case when a freezer is to be added to the existing household load.

A. Recommended

Bishop (R. H. Bishop Co., 103-107 N. Second Ave., Champaign, Ill.) $516, f.o.b. factory. ($34 per cu. ft.) Gross volume, 17.05 cu. ft. Actual useful food-storage capacity, 15.14 cu. ft. Overall dimensions: length, 75 in.; width, 38½ in.; height, 33½ in.; depth of storage compartments, 25 in. Open-type condensing unit (made by Universal Cooler Corp.) with belt-driven recip-

rocating compressor and finned-tube condenser, cooled by fan on motor shaft. Equipped with *Wagner* 1/3 h.p. motor, 1725 rpm. Cooling surfaces consisted of 4 vertical plates running from front to rear and dividing storage compartment into 5 sections. Each plate carried 6 loops of cooling coil connected in series to the condensing unit. Refrigerant, 3 lb. of *Freon 12*. Temperature control dial located in machine compartment; graduated from —20°F to 50°F by 1° divisions. Plug for draining water from cabinet following defrosting operation located in bottom of storage space. Cabinet surfaces both inside and out finished with white lacquer. This freezer in the pull-down test (the purpose of which is to indicate refrigerating capacity of the unit) required 2 hours to reach an average stable temperature of 10.8°F with control set at "0." Motor running time 87.5%, energy consumption 0.9 kwhr. (.06 kwhr. per cu. ft.); later tests indicated that temperature control of dial was inaccurate, as a setting of —9°F was required to obtain an actual temperature of 0°F in the cabinet. The *Bishop* ranked second in energy consumption at 0.51 kwhr. per cu. ft. of storage space per day (24 hours) in no-load tests when the temperature control was set to give an average internal temperature of 0°F. Total energy consumption per day, 7.7 kwhr., with motor running 79% of the time. In the load test starting with an empty box about the same amount of time (30.8 hours) was required to freeze the load as was required by the *Deepfreeze* (29½ hours), but the *Bishop* had the lowest energy consumption per lb. of water frozen. Maximum air temperature reached in box during this test was 29°F (average for first 3 hours was 27.9°F). It is important that this temperature should not go above freezing point of 32°, but even 29°, if sufficiently prolonged, is too high for certain kinds of stored food, such as ice cream. In a further test with an ice load of 210 lb., the *Bishop* froze an additional load of 70 lb. water in 40.4 hours at a somewhat better compressor efficiency than in the first test. These results indicate that the *Bishop* unit can store satisfactorily a 300-lb. food load. Frozen food stored in the lower half of the storage space was found to remain at a temperature below 15°F for nearly 9 hours after cut-off of the electricity supply if a food load equivalent to 280 lb. of water were stored in the freezer; thus with this freezer there should be relatively slight danger of food spoilage from any ordinary length of current interruption. For practical purposes it can be assumed that in freezing foods the energy used will depend almost entirely upon the water content of the foods to be stored (since the specific heat of water is very high compared with other common materials). The average water content of fruits, vegetables, meat, and fish of the kinds commonly stored in freezers will usually run to about 75% to 80% with a minimum around 60% and a maximum around 90%. It was judged that the *Bishop* would be the most convenient box to use, of the 3 reported in this article, as twice as much food could be reached with less effort than in the other two brands tested. Mechanical construction good; refrigerant lines were well supported and insulated. Cost of operation at 4c per kwhr., $9.25 per month, or 60c per cu. ft. of effective storage space, per month (at no load, with room temperature maintained at 90°F). **2**

B. Intermediate

Deepfreeze (Deepfreeze Division, Motor Products Corp., North Chicago, Ill.) $437.25. ($52.50 per cu. ft.) Gross volume, 9.20 cu. ft. Actual useful food-storage capacity, 8.32 cu. ft. Overall dimensions: length, 65½ in.; width, 26¾ in.; height, 40¼ in. Consisted of 2 circular tanks inside diameters, 18 in. and a usable height of 28¼ in. Machine compartment located in center (between the 2 tanks). This is a convenient arrangement except that the two cylindrical drums require some 20% more insulation per unit volume than a single rectangular chamber would, and besides, where the frozen foods are purchased at the store, or rectangular boxes are used for preparing frozen foods in the home, the circular shape does not lend itself so well to food storage as a rectangular container. The two-compartment arrangement, however, does have an advantage in that one compartment can be used for storage, and if the food quantities present in the freezer permit, the second one can be used for freezing food that has not been previously stored. Open-type condensing unit (made by Universal Cooler Corp.; some models are equipped with *Copeland* units) with belt-driven reciprocating compressor cooled by fan on motor shaft. Equipped with *Westinghouse* 1/3 h.p. motor, 1725 rpm. Cooling coils wrapped around liner tank of each storage cabinet.[1] Refrigerant, 5 lb. of *Freon 12*. The desirable feature of a graduated temperature control was not present in this freezer. There was a temperature adjustment device which was evidently intended for use only by the serviceman. There was no drain plug provided for defrosting operation. Outside finish, white lacquer, except tank covers, which had a black soft rubber finish. Inner surfaces of tanks finished in white vitreous enamel. In the pull-down test, the *Deepfreeze* required 4 hours to reach an average internal temperature of —0.6°F. During the pull-down period the motor running time was 62.2% and energy consumption was 0.15 kwhr. per cu. ft. At a room temperature of 110°F, motor was stopped a number of times over a period of 3 hours, by action of its overload release. Ranked best (lowest) in energy consumption, 0.47 kwhr. per cu. ft. of storage space per day in no-load tests (as compared with 0.51 kwhr. for the *Bishop*), with the adjustment device set to give an average internal temperature of —1.2°F. Total energy consumption per day 3.90 kwhr., with motor running time 36%. In the load test, starting with empty box, time required to freeze the load was 29.5 hours (about the same as *Bishop*), but energy consumption per lb. of load was 36% greater than that required for *Bishop*. (The same ratio does not apply to operating costs, of course, which are based on *keeping contents frozen* after they have been gotten into that state.) Maximum air temperature reached in box during this test was 50°F, which occurred during the first hour after the load was added (average for first 3 hours, 34°F). This temperature was 21° higher than that occurring in the *Bishop* and is an

[1] A settling or deficiency of the insulation in the *Deepfreeze* is indidated by the appearance of an area—about ½ sq. ft.—of moisture deposition on the wall of one tank, such that removal of the tank casing and redisposition of the insulation seemed to be called for.

undesirably high figure. In the second test, with an ice load of 28 lb., the energy consumption per lb. to freeze an additional 14 lb. of water was as high as in the first test. In comparison with the *Bishop*, the *Deepfreeze* froze only 1/5 as much water, but in about half the time and with about 1/3 of the energy consumption. The results obtained indicate that the freezing will be done at appreciably lower efficiency (more electrical energy per lb. of food) than the *Bishop*. With equal weight of contents per unit volume, this unit should retain the temperature of its contents nearly as well as the *Bishop* when power is off. Mechanical construction of the *Deepfreeze* considered good; refrigerant lines were well supported and insulated. Cost of operation at 4c per kwhr., $4.70 per month, or 56c per cu. ft. of effective storage space, per month (empty box, maintained at 90°F). On a cost-of-operation-per-cu.-ft.-of-storage-space basis, the *Deepfreeze* falls pretty close to the *Bishop*. **3**

C. Not Recommended

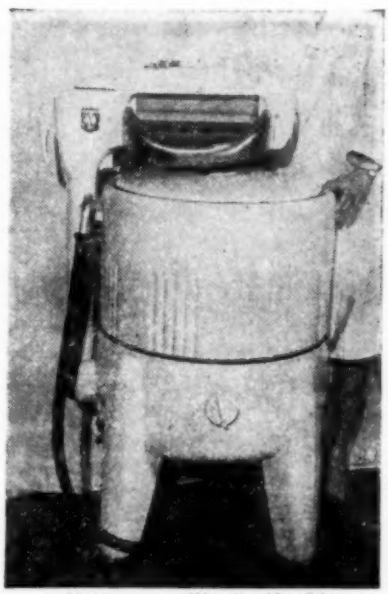
Frigid Freeze (Refrigeration Corp. of America, 55 W. 13th, New York 11, which sells through department stores) $249. ($40 per cu. ft.) Gross volume, 6.88 cu. ft. Actual useful food-storage capacity, 6.23 cu. ft. Overall dimensions: length, 49¼ in.; width, 30 in.; height, 37 in. Depth of storage compartment, 26⅝ in. Open-type condensing unit (made by Tecumseh Products Co.) with belt-driven reciprocating compressor cooled by fan on motor shaft. Equipped with *Delco* 1/6 h.p. motor, 1740 rpm. Cooling coils fastened to outer surfaces of liner walls. Refrigerant, *Freon 12* (quantity not stated but probably less than 1 lb.). (The small amount is undesirable from the consumer's standpoint.) No drain plug provided. Temperature control marked "Off," "Storage," and "Sharp Freeze." Outer surface of cabinet finished with white lacquer. Inside of storage cabinets had an aluminum-like finish. The *Frigid Freeze* ranked a poor third in pull-down test, requiring 8 hours (as against 2 hours for the *Bishop* and 4 hours for the *Deepfreeze*) to reach an average stable low temperature (7.8°F, in the case of *Frigid Freeze* and about as low as could be obtained). Motor ran continuously with energy consumption of 0.26 kwhr. per cu. ft. At a room temperature of 110.5°F, motor was stopped for 1-1/5 hours by action of its thermal overload release. Ranked highest in energy consumption—0.715 kwhr. per cu. ft. of storage space per day in no-load tests with average internal temperature of 7.1°F. (This was about 52% larger energy consumption than that of the *Deepfreeze*, and 40% larger than the *Bishop*.) Total energy consumption 4.5 kwhr. Motor ran continuously. The high energy consumption indicates a wholly inadequate amount of thermal insulation, and the fact that the motor ran continuously indicates inadequate capacity of the condensing unit. In the load test the efficiency in freezing the load was only about 10% below that of the *Bishop*, but it required 7½ hours longer to accomplish it, further evidence of greatly deficient freezing capacity; the motor ran continuously for 36.6 of the 38.2 hours required to freeze. Maximum air temperature reached in box during this test, 40°F. Air at mid-height in the storage space reached a temperature of 15°F in only 2 hours after current was cut off; this rapid temperature rise is another indication of insufficient insulation. Cost of operation at 4c per kwhr., $5.40 per month, or 87c per cu. ft. of effective storage space, per month (45% higher than the *Bishop*).

Washing Machines

TESTS of the three full-sized washing machines on which a preliminary report appeared in the July 1946 issue have been completed and the results appear herewith. Tests on several more machines, including a combination washing and dishwashing machine, are now in progress and will be reported in an early BULLETIN.

B. Intermediate

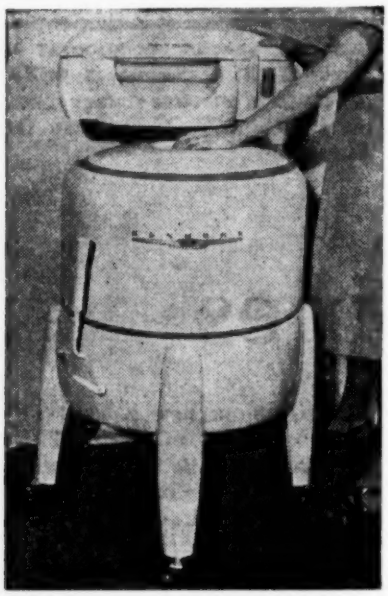
Montgomery Ward's No. 846. $63.95, plus freight. Conventional non-automatic with agitator type of washing action and power wringer. Capacity, 8 lb. of clothes and 18 gal. of water. Tub coated inside and out with vitreous enamel finish, remainder of machine painted with white enamel (easily marred and scratched). Washing effectiveness, a little better than *Bendix*, decidedly less good than *Maytag*. Efficiency of wringing action, good (water left in the clothes was about 95% the weight of the dry clothes). Overall construction, good. Ease of operation, poor. Wringer was difficult to operate. Ease of cleaning and servicing, poor. (Agitator was hard to remove.) Adjustments or repairs somewhat difficult to make. Performance on endurance run satisfactory, with only slight increase of noise. Electrical safety, good (no leakage current and no failure on electrical breakdown test at 900 volts). Minimum fuse required, 10 amperes (making no allowance for other loads on branch circuit). Wringer found to meet Underwrit-



Montgomery Ward's No. 846

ers' Laboratories' requirements as to force required to operate emergency release, and also as to the 2-in. clearance with rolls in released position, but as CR has pointed out previously, meeting such a requirement does not guarantee the user's safety with any wringer-type machine (see CR's May 1946 BULLETIN, p. 9-12). Operation of the wringer release mechanism results in end lock jumping out with great force; this could in some circumstances be a hazard to the operator or to a child standing near the machine. Action of casters when machine was moved found not satisfactory at first; however, this condition later corrected itself. Claimed to be assembled with sufficient oil in gear case for life of machine under normal usage. For especially heavy use, manufacturer recommends replacing gear case oil every third or fourth year. **1**

Sears Kenmore, Model No. 53230 (Sears, Roebuck & Co.) $67.75, plus freight. Conventional nonautomatic with agitator type of washing action and power wringer, similar to but not identical with the *Whirlpool*. Capacity, 8 lb. clothes and 16 gal. of water. Equipped with on-off switch (desirable). Agitator made of plastic. Tub coated with vitreous enamel finish, but white enamel finish on frame, cover, and wringer (easily scratched and marred). Washing effectiveness, good, fairly close to that of the *Maytag*. Efficiency of wringing action, good (water left in the clothes was 100% of the weight of the dry clothes). Overall construction and ease of servicing, good. Ease of operation and cleaning, fair. Performance in endurance run satisfactory except that a slight squeak developed in the friction drive. Electrical safety, good (leakage current below CR's allowable limit). Passed electrical breakdown test at 900 volts. Minimum fuse required, 15 amperes (making no allowance for other loads on the branch circuit). Wringer found to meet Underwriters' Laboratories' requirements as to force required to operate emergency release, and also as to the 2-in. clearance with rolls in released position. (See comment under *Montgomery Ward*.) Machine claimed to be lubricated for life. **1**



Sears Kenmore, Model 53230

Whirlpool, Model 51230 (Nineteen Hundred Corp., St. Joseph, Mich.) $85.75, Zone 2. Conventional nonautomatic with agitator type of washing action and power wringer. Capacity, 8 lb. of clothes and 15 gal. of water. Tub coated with vitreous enamel finish, but white enamel finish on frame, cover, and wringer (easily scratched and marred). Washing effectiveness about equal to that of the *Maytag* (*Maytag* was best of the washers hitherto tested, in this respect). Efficiency of wringing action very good (water left in the clothes was about 90% of the weight of the dry clothes). Overall construction and ease of servicing, good. Ease of operation, fair; of cleaning, poor. Performance on endurance test satisfactory except that an oil leak developed at the drain cock of the gear case, and pump lever became loose on its shaft. Electrical safety, good (leakage current below CR's allowable limit; no failure on electrical breakdown test at 900 volts). Minimum fuse required, 15 amperes (making no allowance for other loads on branch circuit). Wringer found to meet Underwriters' Laboratories' requirements as to force required to operate emergency release, and also as to the 2-in. clearance when rolls have separated to the released position. On operation of the wringer release mechanism see comment on *Montgomery Ward*. Motor and gear case claimed to be permanently lubricated for life, other bearings self-lubricated. **2**

Whirlpool, Model 51230

★ ★ ★ ★ ★ *A Convenient Pocket-Knife* ★ ★ ★ ★ ★

Safe-T-Nife is a handy device which utilizes a new or used Gillette-type razor blade to form a small compact knife suitable for light cutting work such as ripping seams in sewing, clipping, cutting photographic paper, etc. When the device is open to permit use of the blade, one edge of the blade extends about 1/2 inch; in the retracted position, the blade snaps lightly into a protected position so that it can be safely carried in the pocket or purse. As Safe-T-Nife is very thin and flat, and quite light, it can be carried continuously in the pocket without inconvenience. The knife is available in 5-and-10-cent stores and at other dealers in cutlery and novelties at 15 cents. There are also de luxe forms of the product available in gold plate, and solid gold, in gift packaging from manufacturer, Rudolph Beaver, Inc., Waltham, Mass.

Aerosols—A Second Report

IN our September BULLETIN, we presented a general discussion of the use of aerosols and aerosol bombs, so-called, for killing insects that are flying, or resting on exposed surfaces in a room. Mention was made of the mechanical failure of many valves on the aerosol bombs, which resulted in loss of contents. Subsequently a test was made to ascertain the extent to which this failure might be expected to occur. One bomb of each of nine manufacturers was purchased on the open market. These were placed together on a table and, at irregular intervals over a one-week period, the valve of each was opened for about 2 seconds, then closed; the bomb was then allowed to stand until the next opening. This procedure somewhat approximates the usual method of home use where the bomb valve is opened, releasing the aerosol fog, when insects become troublesome.

At various times during the practical trials, three individuals were exposed to the mists released. Several who worked with the bombs found the vapors quite irritating to nasal passages and lungs, and the odor was markedly unpleasant; one person developed a marked dermatitis on the arms that persisted for several days. In view of these considerations, it is possible that the public's experience with the 12 million or so aerosol bombs that were sold in the past season may result in a marked decline in the sales in coming years. Be that as it may, manufacturers are planning for a big season, and one company has in mind the selling of 25 million bombs of the "beer-can type" or low-pressure units that are expected to retail at a price somewhere between $1.25 and $1.50. (A low-pressure bomb is one that shows a pressure of 25 pounds or less at 70°F.)

The above illustration shows five of the nine aerosol bombs included in CR's tests of aerosol units for consumer use as reported in the text.

Of the 9 brands tested, those of only 3 manufacturers (Westinghouse, Gulf, and Bridgeport Brass) performed in a completely satisfactory manner. A fourth (that marketed by Enterprise Industries) might be regarded as passable; the others (products of Airosol, Knapp-Monarch, Regal, Industrial Management, and Pennsylvania Engineering) all proved to be objectionable because of valve failure or defects.

B. Intermediate

Valve worked perfectly throughout the test without leakage or drip:

Aer-a-sol (Bridgeport Brass Co., Bridgeport, Conn.) $3.25; non-refillable. Contained 3% DDT and 0.4% Pyrethrins.

Bug Bomb (Westinghouse Electric Corp., Springfield, Mass.) $3.25; non-refillable. Contained 1% DDT and 0.6% Pyrethrins.

Gulfspray (Distributed by Gulf Oil Corporation and Gulf Refining Co., Pittsburgh) $2.95; non-refillable. Contained 1% DDT and 0.6% Pyrethrins. Bomb and valve appear to be of construction identical with Bridgeport Brass Company's *Aer-a-sol*. From the standpoint of safety and effectiveness, this bomb and the Westinghouse *Bug Bomb* contain the best formulations of any examined, since they are relatively high in Pyrethrins and low in DDT content.

• • •

Valve worked satisfactorily except that there was considerable drip down the side of the bomb while the valve was open:

Bugrenade (Enterprise Industries, Inc., New York City) 98c; non-refillable; 5 fl. oz. instead of the 15

to 16 oz. in the standard type. Contained 3% DDT and 0.2% Pyrethrins.

C. Not Recommended

All the following were defective to a degree because of a valve fault or failure. All are considered unsatisfactory because of the danger involved from getting the liquid insecticide vehicle on the skin when a valve failure occurs, because of the poor economy involved in the use of a bomb whose expensive contents are lost, or because of the danger of staining or otherwise damaging surfaces on which leaking bombs rest, or for some other good reason.

* * *

Valve leaked intermittently after first use. Objectionable greasy deposit on side of bomb.

Airosol (Airosol, Inc., Neodosha, Kans.) $2.95; non-refillable. Contained 3% DDT and 0.4% Pyrethrins.

* * *

Valve leaked badly. Entire surface of bomb wet and "messy"; table on which bomb rested was badly stained.

Mist-O-Mizer (Regal Chemical Corp., Brooklyn, N.Y.) $2.85; refill or exchange for $2. Contained DDT and Pyrethrins in unstated percentages.

* * *

Other more serious valve defects as specified:

Aerosect (Pennsylvania Engineering Co., Philadelphia) $3.98; refill or exchange for $2.35. Contained 0.4% Pyrethrins, which are generally regarded as inadequate to kill any insects except mosquitoes, unless fortified with DDT or other insecticide. Valve failed to produce a good aerosol mist from the start, and, after a few trials, released the liquid as a stream. Directions given on the label for remedying this would require tools and mechanical skill. Since the major claim for the aerosol method of insect control is its simplicity, there seemed to be no occasion to continue the test of this bomb.

Insectoblitz (Industrial Management Corp., Los Angeles) $2.95; non-refillable. Contained 3% DDT and 0.4% Pyrethrins. Two bombs tested. One valve leaked heavily and all contents were lost within 24 hours. Second leaked intermittently. In both cases the liquid ran down the sides of the bomb and stained the window ledge and table on which the bombs were standing.

Magik Mist (Knapp-Monarch Co., St. Louis) $2.75; non-refillable. Contained 3% DDT and 0.2% Pyrethrins. Poison label on package. Valve defective and sprayed hands of operator. Considered dangerous to operate, and use discontinued after first day's trial.

Additional Information on 1947 Studebaker Cars

NEW information that was not available at the time the report on the 1947 *Studebaker* cars appeared in the July 1946 BULLETIN indicates that some of the changes in *Studebaker* cars are of special interest to car owners from a mechanical standpoint. Other changes affecting vision, styling, etc., were mentioned in the previous article.

The *Champion* and *Commander* models have both undergone numerous refinements. The wheelbase of the *Champion* has been increased to 112 inches, 2 inches longer than formerly (length, 192 in. overall), and is offered in two sedan models, two closed coupes, a station wagon, and convertibles with self-raising tops. The *Commander* is offered in two wheelbases, 119 for sedans, coupes, station wagon and convertible bodies, and 123 inches for the "Land Cruiser." Both lines have either "De Luxe" or "Regal De Luxe" equipment.

The new body styling provides 60-inch front seating (hip) room; in sedans the rear seating room is 58 inches. The front door is now 39 inches wide, 4 inches wider than formerly. Overall car width is 69¾ inches; overall height (loaded) is 60¾ inches for the *Champion;* the *Commander* is an inch higher because of larger tires. Neither the *Champion* nor *Commander* 4-door sedans have rear quarter window. Both models have exceptionally wide rear windows, so that effective vision from the driver's seat is increased. As mentioned previously, the 5-passenger coupes of both types have been completely redesigned with approximately double the glass area formerly used. A similar design is used also for the convertibles and station wagons. In the *Champion* the windshield area is 144 square inches and the rear window area in the sedans 239 square inches. In the *Champion* 5-passenger car the rear window is curved.

Other changes include new pull-to type door handles, a center-mounted parking brake handle with pistol-grip, steering wheel mounted at a new angle, and mounting of the rear vision mirror just above the instrument panel rather than on the headboard above the windshield. The center position of the parking brake handle again places it where we believe it should be, and of course was

on practically all cars until recent years. The primary reason for mounting it on the left of the steering wheel was to clear the front compartment for a third person, sitting in the center. However, a basic safety advantage, namely that since most persons are right-handed they can reach and exert more force with the right hand, was sacrificed by the left-hand mounting. To be sure, the left mounting is easier to reach from outside the car, but such use is only occasionally needed.

The engine in the *Champion* has been moved forward 9 inches, bringing the center of engine weight almost directly over the front axle. The passenger compartment in both cars has been moved forward 11 inches and is 19½ inches ahead of the rear axle. While the advantages of increasing the weight on the front axle of a car relative to that on the rear axle are open to technical argument, an increase in riding comfort does result, provided the front springing is corrected for the increased proportion of total car weight it carries. This apparently has been done in the 1947 *Studebaker* cars.

Another significant change is the adoption of self-adjusting brake shoes. As the brake linings wear, the brake shoes are moved outward automatically in specified increments (0.005 inch) so that proper shoe clearance is maintained for the life of the linings. If the mechanism used continues to function correctly, it will serve to eliminate the need for an occasional brake adjustment that cars ordinarily required, and attention to the brake adjustment will be called for only when the linings need replacement.

The engine of the *Champion* is claimed to develop 80 h.p. at 4000 rpm. and has a bore and stroke of 3 x 4 inches, giving a piston displacement of 170 cubic inches. Standard compression ratio is 6.5 to 1, with an optional ratio available of 7 to 1. The *Commander* engine develops 94 h.p. at 3600 rpm. and has a bore and stroke of 3-5/16 x 4-3/8 inches, providing a total displacement of 226 cubic inches and has the same compression ratios as the *Champion*. Connecting rod bearings are of the removable type for both engines, an advantage when bearing replacement is required. (The connecting rods need not be removed and re-babbitted, as is necessary with engines using so-called "spun in" bearings.)

Electrical changes include the use of a 100 ampere-hour battery, moving the starting motor to the battery side of the engine (thus shortening the length of heavy cable required between battery and starter with reduction in circuit resistance), and a solenoid starter switch on the *Champion* which is similar to that previously used on the *Commander*.

In the *Champion* the transmission gears have been made heavier for added service life. The standard rear axle ratio is 4.1 to 1 for this car, and 4.56 to 1 when equipped with overdrive (optional equipment). With overdrive, the effective ratio is 3.19 to 1. In the *Commander* the standard ratio is 4.09 to 1, and 4.55 to 1 with overdrive. Effective overdrive ratio is 3.18 to 1.

Both *Champion* and *Commander* cars are equipped with wider wheel rims than formerly. Standard tire size for the *Champion* is 5.50-15 inches, and for the *Commander* 6.50-15 inches. The use of wider wheel rims adds to car stability and slightly increases the load capacity of the tires.

The "*Hill-Holder*" (which prevents the car from backing downgrade when in any gear except reverse), oil cleaner and vacuum booster (to smooth out windshield wiper operation), are standard equipment on all *Commander* cars, and are optional on *Champions*. Optional equipment on all cars includes the overdrive unit and an underseat heater ("*Climatizer*").

Relative to a change in the planar front suspension, it may be noted that the adoption of lower support arms (arm or link between center of frame and bottom of king pin) removes an objection existing in the suspension system previously used by this maker. In this system it was necessary to make the front springs strong enough that they would not break under the most severe operating conditions in performing the dual function of providing riding comfort and the job of holding the bottom of the front wheels in position under the car. Consequently they probably were stiffer than if they had only the function of flexing to perform, namely to provide riding comfort. The use of softer front springs, plus the shift of weight forward, undoubtedly was responsible for the adoption of the lower arms. With this design the arms hold the wheels, leaving the spring to perform only its primary function, namely that of cushioning the forward end of the car, so that breakage of a spring can no longer cause the bottom of the wheel to move outwards. The spring ends now are mounted on rubber cushions, a change which further contributes to riding smoothness.

"Ozonators"

To many people, the word "ozone" has connoted pure, healthful, and invigorating qualities, and a case is known of a workman who sniffed the chlorine gas coming from a temporary salt-water electric resistance unit, insisting that it was ozone and hence "fine to breathe." While this instance occurred some years ago, ignorance of the toxicity of ozone is still widespread and not confined to the untutored. The public's lack of concern about ozone as a dangerous gas is a natural one, chiefly verbal or aesthetic in its origin. Nature lovers talk about the camping trip in the mountains where they will "get their lungs full of pure ozone," and the association of ozone with fresh, clean, stimulating qualities in the atmosphere is an old one in literature. Sellers of contrivances for making ozone on the spot in the rooms of a home have capitalized on this loose use of the word and some have combated the prospective buyer's skepticism by glowing descriptions of the aid given by ozone in the treatment of diseases ranging from asthma to "weakness," killing bacteria and other microorganisms, deodorizing air, preserving health, and purifying air (whatever that may mean). Even curative values against cancer, syphilis, and tuberculosis have been included in advertising of certain ozonizing devices. Yet within the past 30 years, careful experiments have been carried out that have proved the toxicity of ozone, and there have been a number of reports on this point in the scientific and, in a few cases, even in the newspaper technical press.

Ozone is very poisonous—much more so than carbon mon-

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oxide. From published standards for maximum allowable concentrations of various poisonous gases in air, it seems reasonable to conclude that a person can tolerate less than one-hundredth as much pure ozone as of carbon monoxide, and can tolerate only one-thousandth as much, or less, of impure ozone containing oxides of nitrogen, produced by the glass-dielectric commercial ozonators. The extreme toxicity of ozone, even in its pure form, may be judged from the fact that a concentration of one part in ten thousand (100 parts per million) kills mice in one hour. The same concentration of carbon monoxide is a reasonably safe maximum concentration which may be permitted in garages, etc. Ten parts per million of impure ozone or one part in 100,000 kills mice in five hours' exposure. Ozone is also harmful to plants, one part in one million of air to one part in eight million having been found to produce necrotic spots with desiccation of the leaves. Ozone has even been suggested for use as a war gas because of its toxicity and density.

Some of the many firms who have sold and continue to sell ozone-producing devices, correctly termed *ozonizers*, have been "cracked down" upon by the Federal Trade Commission and other authorities. Such were Atmoray and Atmozone, Oregon corporations, who claimed that their machines would attack the impurities of the blood stream and build and increase the red blood corpuscles; "disease germs of any kind are completely eliminated when coming into contact with ozone"; statements which government experts held to be wholly false. Stone's Ozone-Ray Producer and Stone's Ozone Producer were other Oregon products whose advertisements the F.T.C. alleged were false because they failed to reveal that ozone is particularly irritating to the respiratory membranes in a concentration of more than 0.5 ppm.

Big department stores, it appears, are not acquainted with the history of ozone and ozone-producing devices, for even some stores which claim to test appliances before they sell them have lately been offering ozonators, presumably to skim off some of that "extra money" which a fortunate segment of the population has been able to earn lately. A leading department store in New York City has a laboratory and employs technical experts, who should know something of the possible disadvantages of ozone-producing devices—particularly the presence of the oxides of nitrogen which are produced along with ozone—yet that store has advertised: "Ozone is activated oxygen, nature's own agent for diminishing odors.——— ——— generates this ozone . . . notice the wonderful difference." Marshall Field's department store in Chicago, Abraham & Straus in Brooklyn, and Hearns have all advertised this type of appliance; Lewis & Conger in New York City, and a high-grade Chicago sporting goods firm have also advertised ozonators. There are in CR's files circulars and newspaper advertisements of dozens of devices of this type, and in no case do the promoter's claims appear to indicate any awareness of the potential harmfulness of generating ozone in the rooms of a home or office.

The estimates of the concentration of ozone in air which may safely be permitted for continuous breathing vary greatly. As already noted the F.T.C. has stated that 0.5 ppm. is irritating to the respiratory membranes. The American Medical Association's Handbook of Physical Therapy says that 1 ppm. of ozone is injurious, and remarked that the gas is detectable in concentration far lower than that which is injurious to health. One most outspoken ozone enthusiast claims to have maintained a concentration of 2.5 to 5 ppm. in his home for three years. The most conservative experimenters and authorities set the permissible maximum *at about 0.01 ppm.* Since 0.1 ppm. is about the maximum found in outdoor air produced by the ultraviolet rays of the sun (usually the concentration is much lower than this), a conservative range of safe concentration, from estimates based on experimental work, can be taken as 0.01 to 0.1 ppm. (While it is unlikely that ozone in the very small quantities found in the air naturally is harmful, it is possible that air without any ozone at all would be best so far as health is concerned.)

It has been reported recently that the presence of nitrogen oxides in ozone greatly increases its toxicity, and it may have been this factor which has accounted for the wide variations in past years in experts' opinions on the allowable concentration of ozone in the air. Ozone is formed in its pure form in nature when the oxygen of the atmosphere absorbs radiation in the ultraviolet region of the spectrum. It is formed commercially either by ultraviolet radiation or by spark discharges through air, the latter method being apt to produce nitrogen oxides along

with the ozone.

The usual commercial ozonizer consists of a high-voltage transformer (5000 volts and up) connected to electrodes with some insulator (dielectric) between them. The ozone is generated by the silent discharge between the electrodes. Under certain conditions, what is called a "brush discharge" may form; this is said to generate nitrogen oxides in especially large amounts. Ozonizers with glass dielectrics are prone, especially under certain electrical conditions and with increasing age, to give off more and more nitrogen oxides along with the ozone. A mica-type generator, which also produced a brush discharge, was found to produce a mixture of ozone and nitrogen oxides containing as high as 57 percent of the latter. Some ozonizers have an electric fan for blowing the ozone formed out into the room. The inherent simplicity of these devices and the cheapness with which they can be built, has doubtless contributed to their extensive promotion and sale. As they are in the "patent medicine" class, the markup over production cost is, of course, very large—fantastically so in some cases.

Pure ozone will kill bacteria in air but the concentration required is, according to most authorities, too high for safety, if the air is to be breathed. According to one authority, the killing effect on bacteria by ozone at low atmospheric humidities is nil with air-borne infections. It has been determined that the proteins in the droplets expelled during coughing or sneezing protect bacteria against the action of ozone. Also bacteria on surfaces are more resistant to ozone. These facts indicate a severe limitation of ozone as a means for the prevention of the spread of infection. Pure ozone will also kill insects, but only when present in a very high concentration—more than 500 ppm. being required to affect meal-worm larvae, and 1000 ppm. to kill them in 7 days.

The deodorizing action of ozone has been the subject of considerable controversy. Some say that it destroys the odor by oxidation of the obnoxious substance; others maintain that it masks the odor, perhaps by fatiguing the sense of smell so that the bad odors pass unnoticed. It is possible, of course, that further research may show that it operates in both of these ways. In the practical use of ozonizers as deodorizers for air to be breathed, it has been found difficult to control the amount of ozone so that neither it nor the unwanted odor can be smelled, which seems to be a case of fighting fire with fire, a procedure that is always dangerous in unskilled or inexperienced hands. A far better method of controlling odors in a ventilating system would be the use of activated carbon. This method has been thoroughly tested on a large scale and is safe because it does not add to the air any gas or vapors which might prove harmful.

Ozone is an extremely powerful oxidizing agent. It destroys the strength and integrity of articles made of rubber, causing rapid breakdown; it fades dyes; tarnishes mercury; etc. It also reacts with some organic compounds to produce ozonides, which are often explosive, sometimes violently so.

The value of ozone in the treatment of disease is not yet supported by incontrovertible evidence; in tuberculosis it has been shown to have a harmful effect, if any at all; but those who are not familiar with the practices of patent medicine manufacturers and promoters should remember that if it should ever be proven to have some good effect, the place to look for such proof will not be in the testimonials which are commonly printed in ozonator advertising. Printed testimonial letters seem very convincing, especially when written in a forceful, positive manner and when the signature also carries the letters Dr., M.D., or Ph.D. The persuasiveness of testimonials and the consumers' failure to realize that testimonials as evidences of scientific truth have a value closely approaching zero, are great boons to the sales promoters of questionable products. Naturally, only those testimonials favorable to a product are ever publicized by the promoters, and even when a testimonial is genuine, as is often the case, its accuracy is usually very poor, because it does not involve use of a principle fundamental to scientific work, and the number of experiments performed is not sufficient to establish the facts dependably. When biological questions are involved, it is often necessary to run hundreds or even thousands of tests to prove borderline effects; and the effect of traces of ozone on health is certainly in that category. A general safe rule for consumers is to regard the printed testimonial as a definite sign of inferiority of a product, for testimonials are ordinarily intended to appeal to people of very ordinary or below-average intelligence, who do not stop to analyze the

motives involved and who do not know of the rigorous requirements governing the establishment of facts on a scientific basis where questions of health are involved.

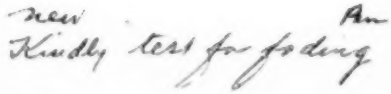
The value of ozone in maintaining health is extremely doubtful for certainly many people have lived to a ripe old age breathing air which was never supercharged with ozone from an ozonizer, and no authentic cases have been recorded where people lived to a still riper old age, or lived in better health, because of breathing air which had been artificially ozonized. While some manufacturers have gone in for apparatus for supercharging the consumer's air with ozone, others, who employ high-grade scientific personnel and utilize their learning and skill, have spent time and money in *reducing* the amount of ozone generated by their products. The *General Electric* germicidal lamp and the *Westinghouse Precipitron* are two examples of the latter. The germicidal lamp now produces so little ozone that it can't be smelled a few inches away, and the *Precipitron* is said to produce no more than is found in the air on a sunny day. Interesting also is the fact that there are a number of patents and articles on methods for *removing* ozone from the air.

In addition to ozonizers, there are other devices which produce ozone in such quantity that it might affect consumers. Quartz-enclosed mercury arcs, for example, such as are found in some sun lamps that lack a protective glass envelope, produce ozone; welding arcs and open sun-lamp arcs may also produce it; and electrostatic precipitators that have not been designed with the problem in mind, may generate harmful amounts.

In view of the extreme toxicity of ozone, it seems unwise to recommend ozonizing the air in a home or office on the basis of what can only be a speculation that future research *may* find some health value in traces of this gas. Hence, for disinfecting or deodorizing air to be breathed, for promoting health, or for treating disease, Consumers' Research still must rate ozonizers or "ozonators" designed for home use *C. Not Recommended.*

The Writing of Ball-Point Pens Does a "Fade-Out"

THE accompanying reproduction of handwriting is taken from an original memorandum of fifteen (not two) lines written with one of the popular ball-point pens. The lower two lines of the memorandum only were covered with black paper and the whole then exposed to daylight and sunlight indoors, in a window facing southwest. The fading, which occurred in something like 350 daylight hours with about 120 hours actual sunlight, was complete, so that the writing above the area shielded from the sun could not be read.



The question has been asked whether use of such a pen should be permitted for office record work. The test shown above and other tests reported in CONSUMERS' RESEARCH BULLETINS (Feb., June, and Aug.) seem to indicate strongly that use of the ball-point pens for record work in the home or office is not at all desirable unless and until a pen is offered which claims to use an ink that is as fast to light as first-class inks of the kinds used in ordinary fountain pens. CR has been informed by the representative of one maker that he is bringing out a pen, which may be available by the time this article appears, that does use an ink having superior non-fading qualities, qualities said to be comparable with those of a standard writing ink. CR will test the writing of this new pen and report its findings as soon as the data are available and ready for publication.

No one can say on the basis of a short-time test what the ink used will do after being kept for a long period out of light in the dark space of a filing cabinet or record book. However, it is quite possible that chemical changes due to substances present in the paper

or in the atmosphere may cause fading, for even writing done with the time-tested gallo-tannate (iron) inks loses its strength to a degree in the course of years even where the writing is not exposed to light.

There were 13 lines of writing above the two lines shown in the accompanying picture, and those have almost completely disappeared. There are faint yellowish traces left of a few words, but the wording could not be read by anyone but a person expert in deciphering documents. The writing in the above experiment was considerably "overexposed," in the fading test by CR and legibility was substantially lost after only a fraction of the number of hours mentioned had elapsed. One should perhaps add that if the pens were good, writing made by their use should not have faded significantly in daylight in the whole time during which the oldest of the current crop of ball-tip pens has been on the market (eleven months approximately).

Fire Extinguishers

Consumers' Research has been fortunate in obtaining the services of a capable fire prevention engineer in bringing up to date the material on fire extinguishers which we issued for our subscribers a number of years ago. As will be plain from the present article, fire extinguishers are among the most important of all household appliances. A bad choice of an extinguisher may leave the home worse off than if none at all were at hand. Hence it is important, particularly to the rural homeowner or to a person having a summer home or camp out of reach of city fire department services, to have extinguishing equipment of the right type and of first-rate quality available.

On account of the length of this discussion, it has been divided into a series of articles which will appear in several succeeding issues of the BULLETIN.

FIRE EXTINGUISHERS *should not be bought on the basis of any sort of sales demonstration.* It is very easy to make any fire extinguisher, even of the very inferior dry powder tube type or the carbon tetrachloride "bottle grenade," perform in convincing and superior fashion by demonstration on a test fire particularly adapted to show the effectiveness of the extinguisher. Extinguishers should be selected for extinguishment of the types of fires for which they are *suitable* and selected from those listed as approved by the Underwriters' Laboratories, Inc., of Chicago, or The Inspection Department of the Associated Factory Mutual Fire Insurance Companies, Boston, which test and list fire extinguishers and affix a label as evidence of approval of design and effectiveness. Extinguishers approved for use on motor craft are listed by the U.S. Coast Guard. There is close agreement in all lists of approved devices.

A clear understanding of the term, "*Emergency Alternate Specification*" (E.A.S.) is of the greatest importance to postwar purchasers of hand fire extinguishers. This phrase was used to designate approval by the testing Laboratories of fire extinguishers acceptable *for the war emergency period only*, and denotes the use of materials in their manufacture inferior to those used in extinguishers made before the war, but considered safe to use for a life expectancy of approximately five years. Extinguishers of both standard and E.A.S. types were manufactured in tremen-

dous quantity during the war. Since V-J day, the manufacture of E.A.S. extinguishers has been discontinued, as Laboratories have ceased to approve E.A.S. equipment. Where installations of first-aid fire extinguishers results in fire insurance rate credits, the use of equal capacity E.A.S.-labelled extinguishers may not earn the rate credit obtainable through the use of the standard extinguishers labelled by the "Factory Mutual" or the "Underwriters' Laboratories." E.A.S.-labelled fire extinguishers in the hands of unscrupulous dealers who sell them to individuals or firms not familiar with their limitations can result in the use of equipment which is unsafe (except during a relatively short life period) and an inferior product, produced during the war *only* because of the shortage of critical metals.

Disposal of both new and used government surplus fire extinguishers is the responsibility of the War Assets Administration and such extinguishers are obtainable under a priority claimant system in which veterans have top priority position. Extinguishers which have been certified as surplus by the armed forces are available through War Assets Administration regional offices throughout the country. Every effort is being made by the War Assets Administration to place war surplus fire extinguishers in the hands of responsible dealers, who will certify the safe operating condition of new and used extinguishers to the public. However, the extinguishers are being sold to veterans and extinguisher dealers at wholesale prices, on a "buyer beware" basis. As there is no price ceiling on fire extinguishers, buyers of war surplus fire extinguishers will be well advised to assure themselves of the integrity and responsibility of the dealer; they should also be sure that the extinguisher is of the type needed to meet their requirements and is in good condition.

Prices to buyers of individual extinguishers are high, but quotations are flexible and shopping around is often useful. After choosing the TYPE of extinguishers satisfactory for your purpose, demand an Underwriters' Laboratories or Factory Mutual Laboratories labelled standard unit, and buy on a price basis. The label gives reasonable assurance of adherence to recognized standards.

Use of Fire Extinguishers

Fire extinguishers are designed to control small fires in their first stages, usually the first five minutes. When a fire is small it can be stamped out, smothered with a rug, or put out with a pail of water. The provision of fire entinguishers in the home may give a false sense of security to the family unless all individuals are trained in the use of the equipment. The fire department should be called immediately upon discovery of fire, either by telephone or municipal alarm box, with extinguishment efforts confined to the ability of the householder. Water pails are among the best extinguishers, but have the disadvantage that, being useful for other purposes, they are often unavailable in a fire emergency.

Sand or inert matter is an effective extinguishing agent. Pails of sand (dry and clean) are useful for small fires in flammable liquids and greases on floors, etc., and on low-voltage electric apparatus (other than moving machinery). Such methods will work only on fires that are quite small, so that they can be attacked at close range.

The following discussion relates primarily to portable fire extinguishing appliances, mainly for household and similar use. Instruction and systematized maintenance is most important: OTHERWISE MONEY SPENT FOR EXTINGUISHERS IS LIKELY TO BE WASTED. In recharging, manufacturers' instructions should be carefully followed.

Uninformed and ill-directed attempts to extinguish a fire may be dangerous—e.g., water thrown on grease burning on a stove causes it to sputter violently. A burning pan of deep fat can usually be extinguished by placing a large metal cover over the pan; a fire in spilled grease on a stove can be put out with flour, baking soda, or sand, but NOT with soda-acid or other water-solution type of extinguisher.

Fire prevention engineers agree that city dwellers should leave all but the briefest endeavors at fire extinguishment to the fire department. Rural residents, at greater distances from fire departments than city dwellers, can provide valuable additional safeguards for their properties by the provision of cisterns, dammed streams, and ponds with special provision for facilitating the access and and use of rural fire department pumpers.

Fire protection engineers generally place extinguishers in three classifications:

1. Those which quench or cool (by water or water solu-

tion): soda-acid, foam (surface effect only), loaded stream, anti-freeze, plain water, pump tanks, water pails, cask and pail units. Most effective on combustibles such as wood, paper, textiles, rubbish.

2. Those which smother (as with a blanket of gas or foam): foam, carbon tetrachloride, carbon dioxide, dry chemical (gas type). The smothering type of extinguisher is essential for putting out fires in open containers of flammable liquids and electrical equipment.

3. Those whose action is by oxidation-inhibition: loaded stream (also has quenching effect).

Soda-acid, foam, or plain water extinguishers should not be used in buildings which are unheated or may be without heat during periods of cold weather.

Extinguishers of the anti-freeze solution, loaded stream, carbon dioxide, carbon tetrachloride, and dry chemical (gas pressure type) are not subject to freezing at any temperature above —40°F to —50°F. Water pails, pump tanks, cask and pail units may be used with non-freezing solutions added.

Anti-Freeze Solution Extinguishers

Special non-freezing extinguishers are suitable for use in locations where soda-acid or water extinguishers cannot be installed because of the possibility of freezing. They are designed primarily for fires in ordinary combustible materials or for any type of fire that can be handled by a soda-acid extinguisher. They are NOT to be used on live electrical equipment; are not effective on open containers of flammable liquids, but are of value wherever the quenching effect of water solutions may be employed. Slightly more harmful to fabrics than plain water. The 2½ gallon size is similar in appearance to the soda-acid type, and of approximately equal extinguishing capacity. Non-freezing extinguishers use a solution which will not freeze even at temperatures as low as —40°F. The liquid usually is a calcium chloride solution discharged either by stored pressure, pressure released from a cartridge containing a slow burning fuse, or by pressure developed by chemical reaction. The working range is 30 to 40 feet. Non-freeze extinguishers are considerably more expensive than the soda-acid type, but are reliable for unheated buildings. Manufacturers' own recharges must be used.

The following extinguishers of the non-freezing type, listed by manufacturer, are all recommended.

A. Recommended

American-LaFrance-Foamite Corp., Elmira, N.Y. •
Allweather—2½ gal.

Badger Fire Extinguisher Co., 626 Somerville Ave., Somerville, Mass. • *Badger's*—2½ gal.

The Fyr-Fyter Co., 221 Crane Ave., Dayton, Ohio •
Instant—1 gal.; *Instant*—1¾ gal.; *Instant Model R*—2½ gal.; *Instant Model X*—2½ gal., Gas Cartridge Type; *Polar Bear*—2½ gal., Gas Cartridge Type. (The 1¾ gal. unit is equivalent in fire extinguishing capacity to a 2½ gal. Soda-Acid Type Extinguisher.)

Fyr-Fyter Co. of Canada, Ltd., Hamilton, Ontario •
Instant—1¾ gal., equivalent in fire extinguishing capacity to a 2½ gal. Soda-Acid Type Extinguisher.

Kidde, Walter, & Co., Inc., 675 Main St., Belleville, N. J. •
Kidde Anti-Freeze—2½ gal., Gas Cartridge Type.

Kidde, Walter, & Co. of Canada, Ltd., Montreal, Quebec •
Kidde Anti-Freeze—2½ gal., Gas Cartridge Type.

Knight & Thomas, Inc., 624 Somerville Ave., Somerville, Mass. •
Protex—2½ gal., 3-Solution Type; *Protexite*—2½ gal., 2-Solution Type.

LaFrance Fire Engine and Foamite, Ltd., Toronto, Ontario •
2½ gal. capacity—calcium chloride. Chemical Reaction Type.

Pyrene Manufacturing Co., 560 Belmont Ave., Newark, N. J. •
Pyrene—2½ gal., Gas Cartridge Type.

Pyrene Manufacturing Co. of Canada, Ltd., Toronto, Ontario •
Thermene—2½ gal. Loaded stream, chemical reaction type, and 2½ gal. Loaded stream, Gas Cartridge Type.

Stempel Fire Extinguisher Manufacturing Co., Philadelphia •
2½ gal., calcium chloride, Gas Cartridge Type.

* * *

Continuation of this article will appear in later BULLETINS.

SOAP continues to be the cheapest and most effective detergent in spite of the advances made by a wide variety of soapless or synthetic detergents during the wartime and post-war shortages of soap. There are, however, certain special conditions in which the synthetic detergents function more effectively. In hard water areas, points out a recent article in Chemical Industries, soap is difficult to use and uneconomical unless the water is softened; the synthetics are considered more desirable for washing glassware and dishes, woolens, colored fabrics, upholstery, and rugs. Actual experience, however, and studies by Miss Jessie Richardson of Montana State College Home Economics Dept. with Montana hard water indicate that soap really cleans soiled cotton, rayon, linen, silk, and woolen garments better than the soapless detergents. The main problem today, however, is where to find the soap.

Insect Repellents

ALTHOUGH the season for the more pestiferous insects will be pretty well gone in most parts of the U.S. by the time this reaches our subscribers, there will be parts of the country where stinging and biting insects will still remain a problem; and there is another factor making this discussion timely, namely, that there are to be widely sold in the near future millions of bottles of government insect repellents of the kind that were issued to the troops.

The information in this article will be helpful, in giving information on the effectiveness of the best repellents and the disadvantages and limitations which all of them have. There is little doubt that new studies and developments in this field will bring very useful and effective substances for keeping insects at arms length, so to speak, within the forseeable future; if this should come about, the results will be almost as beneficial to man in his war against his least but not least annoying enemies as was the development of DDT and certain other recently announced insecticides.

DURING summer and autumn, attacks on human beings by bloodsucking insects and their near relatives, ticks and mites, including chiggers or "red bugs," are well and unpleasantly known. Not only are the bites painful and often intensely irritating but also they are at times the mechanism of transmission of many dread diseases, a fact that was brought home with striking clarity during deployment of our troops all over the world during World War II. In the tropics, and especially in the Pacific theater, malaria spread by mosquitoes and scrub typhus by mites endangered the lives of more men and probably rendered more unfit for combat than all the efforts of the Japs combined. Similar conditions involving flies, lice, fleas, ticks, mosquitoes, mites, and the diseases they spread prevailed in most of the far-flung operations of American troops.

In 1943 the War and Navy Departments in cooperation with the Bureau of Entomology and Plant Quarantine and other civilian agencies of the Federal Government, many universities, and industrial laboratories, launched upon an intensive laboratory and field research program centered at Orlando, Florida, to search for materials and methods to be used by troops in the field to repel attacks from these deadly pests. Many products and procedures were developed and put into use that were of great value in the closing months of the war. Unfortunately, most of these, because of expense, objectionable qualities, or inconvenience in use, appear to be of no value for use by civilian consumers. A few, though far from perfect, give worthwhile protection and deserve trial by consumers.

Repellent liquids were developed which, when applied to the skin, prevented bites for four hours and longer; these were issued to troops in enormous quantities. Men in combat have little time or inclination to stop and re-apply repellents when the effectiveness of an application declines. Some of the same materials applied to the margins of clothing open-

Name and Manufacturer	Cost at Retail Stores	Active Ingredients	Claims	Evaluation of Directions for Use	Rating on Active Ingredients, Claims, and Directions
Skeeter Skoot (United Drug Co., Boston and St. Louis)	35c for 3 oz.	Not given.	Guaranteed to give satisfaction.	Not satisfactory.	Not at present recommended; however, the money-back guarantee may justify trial.
Chase'm (Chase'm Co., Philadelphia)	39c for 2 oz.	Not given.	Use for mosquitoes, biting flies, gnats, fleas, chiggers. Lasts several days. Claim of protection inferred from directions for treating clothing margins.	Good	Not at present recommended, because names of active ingredients are not given.
Skat (Distributed by Skol Co., Inc., N. Y. C.)	57c for 2 oz.	Dimethyl endolene, 25%.	Protection against mosquitoes, chiggers, biting flies, gnats.	Satisfactory, for use on skin only.	Recommended for trial. Dimethyl endolene (dimolene, dimethyl "carbate") discussed in article. Active ingredient stated on label, but percentage appears low.
Jitterbug (Grove Laboratories, St. Louis)	35c for 1 oz.	Not given; amount stated as 46%.	Protection against mosquitoes, chiggers, ticks, sand fleas, sand flies.	Satisfactory, cautions against possible allergy.	Not recommended. Names of active ingredients not shown.
Dispelent (Distributed by Whelco Products, Inc., N. Y. C.)	59c for 1½ oz.	Not given.	Ten times more effective than oil of citronella. . . . Effective for 10 hours. Non-injurious to skin.	Satisfactory. Use on skin or clothing.	Not at present recommended. Names of active ingredients not shown. Claims for lasting protection far exceed those generally recognized as dependable.
Veck (Victoria Chemical Co., Newark, N. J.)	40c for 4 oz.	"Derex and Lethane."	None	Not satisfactory.	Not recommended. Caution label and presence of Lethane both suggest potential skin injury. Ingredient "Derex" unknown to writer.
Oil of Citronella (Distributed by McKesson & Robbins, Inc., N. Y. C.)	30c for 1 oz.	Oil of Citronella.	None	None	Not recommended because of odor and generally poor repellent value.
Insect Repellent 6-12 (Carbide and Carbon Chemicals Corp., N. Y. C.)	49c for 2 oz.	2-Ethylhexanediol-1,3 (Rutgers 6-12).	Protection against mosquitoes, biting flies, gnats, fleas, chiggers.	Satisfactory	Recommended. Claims may be optimistic but directions are clear and active ingredient is stated.
Stun (Distributed by Stun Products, L. I. City, N. Y.)	47c for 2 oz.	Not given.	None	Poor	Not recommended. Names of active ingredients not shown; directions are poor.
Bee Brand Insect Repellent (McCormick & Co., Inc., Baltimore)	25c for 1¾ oz.	Dimethyl phthallate, 99%.	For mosquitoes, biting flies, gnats, fleas, chiggers.	Good	Recommended. Entire labeling is good, and dimethyl phthallate is effective, as discussed.

ings, cuffs, waistbands, lapels, hosiery, give effective protection for days rather than hours. Even better protection resulted from methods in which the clothing was impregnated in the wash, either by hand or in portable field laundries. Of these three methods, application to skin and treatment of margins of clothing openings are practical for individual civilian use. Attempts at protection of the margins of women's clothing are of little use, however, unless slacks, and high-necked, long-sleeved upper garments are worn. There are two new developments which may be effective against chiggers and ticks particularly for use as out-of-doors sprays and dusts, but the materials, discussed thus far only in technical reports, are not yet available to consumers, and one of the two has such an unpleasant odor that it is practically unbearable to many people.

The individual user must make his own choice as to whether or not the protection afforded offsets the disadvantages. All the repellent liquids are solvents for varnish, shellac, rayon, nylon, and other surfaces and synthetic fibers, and they may cause unsightly staining of various fabrics. None of the materials protects against a sufficiently wide assortment of pests. The duration of protection when applied to the skin is only four to six hours at best and decidedly less when the user is perspiring. None of the treatments is completely non-toxic. Severe irritation to the eyes is not uncommon; this may come either from careless application or from contamination by treated hands. Occasional individuals find the odors objectionable, particularly when applied to the skin.

The best formula developed by the Orlando group during the war involved the chemicals dimethyl phthalate, Indalone (N-butyl mesityl oxide oxalate), and 2-ethyl hexanediol (Rutgers-612) in combinations by volume of 1:1:1 and 2:1:1. Large surpluses of both formulations have been offered for sale by the government and are to appear on the civilian market in relabeled original bottles. In this combination, dimethyl phthalate is especially effective against chiggers and other mites; Indalone against biting flies; and Rutgers-612 against mosquitoes. The combination is as effective against all these species as is the full strength of any component.

In addition to the above, dibutyl phthalate and benzyl benzoate, either separately or in equal parts, are especially effective against mites; and dimethyl "carbate," known commercially both as dimethyl endolene and dimolene, is rated as one of the best of the most recent developments.[1]

As this goes to press a great deal of news publicity and even radio time is being given to a U.S. Navy repellent mixture, called "448" which is claimed to be longer lasting than any of these and to be poisonous to insects as well as repelling them. The claims made by Navy personnel have not been substantiated by civilian workers and, moreover, the U.S. Food and Drug Administration toxicologists have not approved the use of 448 on human skin. It causes severe dermititis on some individuals and certainly requires much further study before recommendation of its use is justified.

None of the chemicals, either singly or in combination, has proved highly effective against ticks. Where six-inch margins of outer clothing have been impregnated with Indalone, dimethyl phthalate, or benzyl benzoate, good protection against immature forms and fair protection against adult ticks have been reported, but the percentage of protection is not sufficiently high to give anything like assurance of safety against the bites. It is doubtful that this procedure will find wide acceptance with the consumer public despite the fact that ticks, because they spread spotted fever, tularemia, and one form of typhus are especially dangerous to human health.

The most significant point about repellents, in so far as consumers are concerned, is that intensive research was stimulated by the war and that this research is continuing. The products thus far developed give better protection as skin or clothing treatments than anything previously available. Readers of CR BULLETIN who suffer from the annoyance of bloodsucking insects or burrowing mites are advised to try some of the better commercial items offered this season. It is wise to purchase only products listing the active ingredients, to purchase those which clearly specify their purpose, i.e., effective against flies, mosquitoes, mites, or all three, and to follow directions for use carefully. Perhaps most important of all, they must be applied before the insects attack, if they are to be of value. Remember to take precautions against getting any of the material into the eyes.

A varied assortment of packaged repellents has been examined and rated on the basis of ingredients, label claims, and

directions, and results are shown in the table.

A product is recommended for trial, when sufficient information is given on the label to justify this. The chief basis for recommendation lies in the active ingredients, that is, in the chemical or chemicals which do the repelling, and in the percentage of the total volume represented by these repelling ingredients. Research workers report that any dilution with ingredients which do not repel lessens the protection from any of the known repellent chemicals. Federal laws which require a statement of ingredients on the package label for insecticides in general do not thus far make such labeling mandatory for repellents. Most manufacturers, therefore, choose not to give a statement of ingredients.

Curiously enough, present Federal law requires that the active ingredients in insecticides be listed by name only when these are dangerously poisonous. Unless classified as "Class A" or dangerous poisons, all that is required is that either the active or the inert materials be named and percentages listed, and, in the event that all ingredients are active, no listing at all is necessary. Generally, therefore, the purchaser has no means, except the statements of the manufacturer and the retail salesman, for judging the nature of pest control products.

Most of the products listed in the table do not carry a statement of ingredients. For these, without actual performance testing, which has not yet been practicable, no recommendation for or against trial is possible. They are listed as "Not Recommended," even although some at least may contain good repellent combinations. Possibly a number of these would justify recommendation for trial if the ingredients were known.

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[1] The full chemical name of the substance is dimethyl ester of cis-bicyclo (2,2,1) heptane 2,3,dicarboxylic acid.

Off the Editor's Chest

[Continued from page 2]

centrating the attention of their members on prices because they cannot afford the risk of public, that is, consumer, displeasure with new strikes at the present time. Their policy in this respect is largely window dressing, for, points out the newsletter, "real 'buyers strikes' would put the laboring man out of his job," and the smarter labor leaders know this full well.

It is quite possible that the widely-publicized campaign of the CIO to protest the high cost of living is a shrewd move to put itself in a position with the public as being concerned to protect the general or consumer interest in goods and their production. The country has pretty generally grown very tired of strikes that have seriously delayed production of much-needed consumer goods and which, in the case of the railway and coal strikes and scattered strikes of elevator operators, power and gas plant workers, and garbage collectors, have seriously menaced public welfare for the advantage, often temporary or only apparent, of a small minority. Furthermore, it is plain, as several responsible sources have pointed out, that the added labor costs incurred in the wage rises in the steel, coal, automobile and accessories industries have not only raised the prices of finished articles to consumers, but have been reflected in rises in the prices of all sorts of commodities, not just the ones directly affected.

There are an increasing number of cases in which unions, in advancing their own economic advantage or entrenching their positions, have raised prices or in other ways have worked against consumers' welfare. Nearly every week some case of this sort is reported in the public press. Some of the most flagrant that have occurred in the past year include the requirement by the Teamsters' Union in many large cities, such as Boston, New York, Philadelphia, Pittsburgh, that every paid driver who brings a truckload of perishable foodstuffs to market must hold a union book. The farmer who does not employ a full-time member of the Teamsters' Union and who sends his truckload of carrots, cabbage, celery, or tomatoes to market by his hired hand, must pay an extra $7 or $8 to a union member as a license fee *merely to permit the truck to proceed from the city limits to the market.* The charge is, of course, added to the price paid by the housewife for vegetables, and no needed or wanted service of any kind is performed by the union or its members for the truck owner or the public.

Early this year, at a time when there was considerable demand for fish during the period of meat scarcity, the Atlantic Fishermen's Union went on strike for five months for demands which included not only a 60 percent share for crew members in the gross earnings from fishing trips, but also *the right to engage in slowdowns or work stoppages whenever an oversupply of fish forced prices down* and thus lowered the crew's share in ship earnings.

During the spring canning season in California, a jurisdictional fight between an AFL and a CIO union prevented farmers from delivering produce to the canneries; yet, as every housewife knows, the stocks of canned fruits and vegetables in grocery stores have

been near the vanishing point. In Chicago, the Meat Cutters' Union forced all meat markets to close regularly at 3 P.M. on Saturday in spite of the fact that Saturday afternoon is one of the busiest shopping periods of the week. In Detroit, during a gasoline workers' strike, the Oil Workers' Union refused to include refrigeration servicemen in the list of essential occupations to which they were willing to supply gasoline. When protest was made that breakdown of refrigeration would involve spoilage of food, the union's reply was: "To hell with the food. Let it spoil." In still another case, an affiliate of the Teamsters' Union was set up which all independent filling station operators in a particular area were required to join to provide teeth for a program of definite protection *against price cutting*.

These are just a few of hundreds of examples that come to hand. Any reasonably close reader of newspapers and news magazines will come across many others from time to time, where union leaders have shown the grossest disregard for the welfare of consumers and of the nation in times of serious shortage, of rising costs, even of public emergency involving property and health.

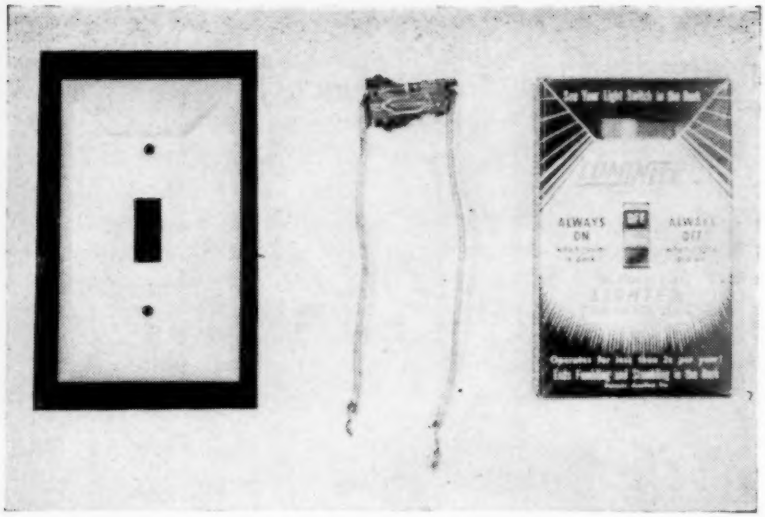
It will be obvious on mature reflection that the attempt of labor groups and their sympathizers to pose as defenders of consumers in the fight against rising prices is misleading and deceptive. Organized labor's previous record as an advocate of the consumer's interest and welfare has been poor. As one analyst of economic trends has pointed out, a rise in wages for only a portion of the population is a factor making for higher prices than consumers in general can afford to pay. Consumers will rightly suspect that when the leadership of unions, which have indulged in prolonged and costly strikes that play havoc with the even flow to market of a wide variety of needed products, stage parades and demonstrations and issue publicity releases proclaiming their earnest desire to help keep prices down, they are attempting to divert public attention from their very direct responsibility for the rising cost of living and the scarcity of automobiles, refrigerators, washing machines, and similar items.

The way to check the rising cost of living, meaning to reduce prices or keep them down, is to decrease, not increase, the activities and personnel of government bureaus and agencies, to eliminate regulations and controls imposed on industry and on individuals, to get production lines rolling at the peak capacity of which they are capable, and to eliminate the unnecessary toll taking and union feather-bedding practices (which invariably increase the prices the consumer has to pay). Staging parades in large urban centers for the benefit of newspaper photographers and picketing neighborhood shops may be good publicity, but the lowering of prices is not a matter of psychology but of *increased production*, and the elimination of wastes and of the collection of pay for services not rendered or not needed.

★ *Illuminated Wall-Switch Plate* ★

HOUSEHOLDERS who have light switches located in dark, hard-to-find places may be interested in a new gadget which has recently appeared on the market, known as *Luminite*. This is made by Associated Projects Co., 74 E. Long St., Columbus 15, to retail at $1. *Luminite* is an illuminated switch plate that can be installed in a very few minutes without the services of an electrician and with no tools other than a screw driver. The old switch plate is removed and the two wires leading from the device are connected to the two terminals of the switch. CAUTION: The power must be off; this is done by opening the main switch or removing the fuse on the particular line involved when this is done. (The device, according to the instructions on the carton, can be used on two- and three-way switches, and is available in sections for multiple plate switches.)

The principle of *Luminite* is very simple. It consists of a very tiny neon light (about ¼ inch in diameter by an inch long). This lamp is in series with a 200,000 ohm current-limiting resistor (see Fig. 1) all cemented into position on the back surface of a switch plate made of a translucent plastic material. When the switch is in the "off" position, the tiny light burns and its glow, though dim, is readily seen at night or in locations where the daylight is not strong, through the translucent switch front. The glow (though ample in dark-



ness or dim light) is too weak to be seen in a sunny or brightly illuminated place. When the switch is turned on, the lamp is out of circuit and goes out.

The device can be recommended for installations where it is a matter of importance to know that a given wall switch is off. It would not be recommended for ordinary use on account of the probable necessity of replacing it at rather frequent intervals in normal service. (A specific answer cannot be given on this point since there was not time to run life tests, but advertising by the General Electric Co. of the type of neon lamp used in this switch plate indicates a life of about 3000 hours—which would be equivalent to about 125 days with the lamp burning constantly, that is with the switch lever in the off position.) The manufacture of this device should provide a very satisfactory margin for the manufacturer as the concealed lamp which forms the working basis of the device is in itself very inexpensive, its retail price being only 8c. The retail value of the small resistor would be perhaps another 5c.

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Dandruff.....Aug., 4
DDT.....Jan., 3; Feb., 4, 29
Denture adhesive powders†.....July, 4
Deodorant, new paste (Veto)†...Sept., 29-30
Deposits, automobile, refunds.....Sept., 4
Diapers, babies'†.....Mar., 14-17
disposable†.....June, 6-7
Dishwashing product (Glim)†.....Sept., 30
Dog food, deleterious effects of insufficient protein.....Aug., 30
Dry shaver (Vestpok)†.....July, 18-19
Dustcloths, emulsion for treating†..Apr., 26
Dye, household textile (Tintex)†....Sept., 29

Editorial.....each issue, page 2
Exposure meters, photographic†....Jan., 29

Fans, electric†.....Sept., 18-19
Fire extinguishers†.....June, 26
Flashlights, three new†.....May, 7
Furnaces, high-pressure selling†....Sept., 4

Gasket sealer (Cross Country Gasket Maker)†...July, 30
Gasoline.....Apr., 24, 26; July, 10-11†

Hair tonics and a hair dye†.....June, 19-20
Heart murmurs, and activity.....Sept., 4

Insecticides, aerosol†.....Sept., 9-11
Irons, electric†.....Aug., 5-8

Jacks, automobile†.....May, 23-24

Lenses, coated, photographic†...May, 17-20
Lotions, hand†.....Apr., 5-7

Mayonnaise, test of 6 brands†....May, 13-15
Mixers, household electric†.....Sept., 5-8
Motion pictures†.....each issue
Motor oil, doped or premium†...Sept., 21-24
Motor oil dope (Casite)†.....Apr., 14-17
Motor oils†.....Aug., 13-14; Sept., 19-20
Mouthwash.....Sept., 3

Nail lacquers†.....Jan., 15-18

Pants, babies' training†.....June, 7-9
Pencils, glass-marking†.....Jan., 26
Pen, fountain (Esterbrook)†.....July, 4
Pens, fountain, ball-tipped†....Feb., 13-14; June, 13-14; Aug., 20-22
Permanent waves, home†.....Mar., 17-19
ill-effects of cold wave..May, 3, Aug., 3; Sept., 3-4
kits for home use†.....Mar., 19
Phonograph needles†.....Jan., 19-20; Feb., 15-17; Mar., 23-25; June, 9-10
Phonograph records†.....each issue
Photographic developing and printing, commercial mail-order†.....July, 19-20
Pressure saucepans†.....Mar., 5-9; Aug., 11-13

Radios†.....Mar., 26-27; Apr., 7-9; June, 18; Aug., 9-10
Record player†.....June, 18-19
Refrigerators, electric†.....Sept., 16-18
gas, kerosene†.....June, 17
Removers, paint, varnish†.....Apr., 12-14

Shampoo, cream†.....Apr., 30
Sheets, waterproof crib†.....Apr., 21-22
Sink and drainboard mender†.....July, 30
Soap, house and auto†.....May, 30
Soap, Superfatted Basis†.....Mar., 38
Steam irons†.....Jan., 23-26
Stoves, electric table†.....Aug., 18-20

Toaster, non-automatic†.....July, 5-8

Washer, portable†.....Aug., 14-15
Washing machines†..Feb., 10-12; May, 8-12; July, 13-14
Water softeners†...Mar., 30-33; Sept., 11, 15
Waterproofing walls (Aquella)†...May, 20-22
Waxed paper†.....July, 23-24
Weed control†.....Aug., 22-24
Welding outfit, electric†.....Apr., 17-19

†indicates that listings of names or brands are included.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Chicago Daily Tribune, The Christian Century, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Mademoiselle, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety* (weekly), and *Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, or Magnacolor)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	9	2	**Abilene Town**	*mus-wes AY*
1	9	8	**Adventure**	*mel A*
—	1	2	**Alias Billy the Kid**	*wes AYC*
9	6	—	**Anna and the King of Siam**	*dr A*
—	4	4	**Avalanche**	*cri-mel AYC*
1	7	3	**Badman's Territory**	*wes AYC*
—	4	5	**Bamboo Blonde, The**	*mus-war-rom A*
—	4	5	**Bedlam**	*dr A*
—	3	3	**Behind the Mask**	*cri-mel A*
—	2	2	**Beware**	*mus-com A*
1	5	1	**Big Sleep, The**	*cri-mel A*
—	4	2	**Black Angel**	*mus-mel A*
—	3	2	**Black Beauty**	*dr YC*
—	4	6	**Blonde Alibi**	*cri-com A*
—	1	4	**Blonde for a Day**	*mys A*
—	3	3	**Blondie's Lucky Day**	*com AYC*
1	11	2	**Blue Dahlia, The**	*cri-mel A*
—	2	1	**Blue Sierra**	*dr-c AYC*
—	2	2	**Border Bandits**	*wes AYC*
—	3	2	**Bowery Bombshell**	*mel AYC*
1	6	5	**Boys' Ranch**	*dr AYC*
—	6	10	**Bride Wore Boots, The**	*com A*
2	3	—	**Brief Encounter**	*dr A*
2	7	2	**Caesar and Cleopatra**	*dr-c A*
2	9	3	**Canyon Passage**	*wes-c A*
—	1	5	**Caravan Trail, The**	*mus-wes-c AYC*
—	5	5	**Cat Creeps, The**	*cri-mel A*
1	8	4	**Centennial Summer**	*mus-com-c A*
1	6	3	**Claudia and David**	*com AYC*
3	10	2	**Cluny Brown**	*com A*
—	5	—	**Cockeyed Miracle, The**	*fan A*
—	3	3	**Colorado Serenade**	*mus-wes-c AYC*
2	6	1	**Courage of Lassie**	*dr-c AYC*
—	2	1	**Cowboy Blues**	*mus-wes AYC*
—	6	3	**Crack-Up**	*cri-mel A*
—	1	2	**Crime of the Century**	*cri-mel A*
—	3	2	**Criminal Court**	*mus-cri-dr A*
—	1	4	**Cuban Pete**	*mus-com AYC*
—	3	5	**Danger Woman**	*mel A*
—	2	4	**Dangerous Business**	*cri-mel AYC*
—	3	2	**Dark Alibi**	*mys-mel AYC*
1	10	4	**Dark Corner, The**	*cri-mel A*
—	4	4	**Dark Horse, The**	*com AYC*
—	3	5	**Dark Is the Night**	*war-dr A*
—	8	1	**Days and Nights**	*war-nov A*
—	11	2	**Dead of Night**	*mys-mel A*
—	1	6	**Deadline for Murder**	*cri-mel A*
—	2	2	**Desert Horseman, The**	*mus-wes AYC*
—	3	3	**Devil Bat's Daughter**	*mys-mel A*
—	2	4	**Devil's Mask, The**	*mys-mel AY*
—	9	5	**Devotion**	*biog-dr AYC*
—	5	3	**Ding Dong Williams**	*mus-com AYC*
—	10	3	**Do You Love Me?**	*mus-com-c AY*
—	2	6	**Don't Gamble with Strangers**	*mys-mel A*
—	4	3	**Down Missouri Way**	*mus-com AYC*
—	7	4	**Dressed to Kill**	*mys-mel AYC*
—	3	1	**Earl Carroll Sketchbook**	*mus-com A*
1	10	3	**Easy to Wed**	*mus-com-c A*
—	3	2	**Faithful in My Fashion**	*rom A*
—	4	7	**Falcon's Alibi, The**	*mus-cri-mel A*
—	2	4	**Freddy Steps Out**	*mus-com AY*
—	3	3	**French Key, The**	*mys-mel A*
—	1	2	**Frenzy**	*mys-mel A*
2	11	3	**From This Day Forward**	*war-dr A*
—	4	1	**G.I. War Brides**	*dr A*
—	2	2	**Galloping Thunder**	*mus-wes A*
—	5	2	**Gay Blades**	*com AYC*
—	2	2	**Gay Cavalier, The**	*mus-wes AYC*
—	1	3	**Gay Intruders, The**	*war-nov AYC*
—	—	6	**Genius at Work**	*mys-com A*
—	3	7	**Gentleman Misbehaves, The**	*mus-com A*
—	—	4	**Gentlemen with Guns**	*wes AYC*
—	1	3	**Ghost of Hidden Valley**	*wes AYC*
—	7	10	**Gilda**	*mus-cri-mel A*
—	2	7	**Glass Alibi, The**	*cri-mel A*
—	2	2	**God's Country**	*mel-c AYC*
—	2	3	**Great Day**	*war-dr AYC*
4	11	2	**Green Years, The**	*nov AY*
—	1	3	**Gun Town**	*mus-wes A*
—	3	1	**Gunning for Vengeance**	*wes AYC*
1	13	3	**Harvey Girls, The**	*wes-mus-com-c A*
—	2	2	**Haunted Mine, The**	*wes AYC*
—	1	2	**Heading West**	*wes AYC*
1	7	6	**Heartbeat**	*com A*
—	2	2	**Hello Moscow**	*mus-com A*
12	2	2	**Henry V**	*dr-c A*
—	5	2	**Her Adventurous Night**	*com A*
—	5	10	**Her Kind of Man**	*mus-cri-mel A*
—	1	2	**High School Hero**	*mus-com AY*
2	8	1	**Holiday in Mexico**	*mus-com-c AYC*
—	3	3	**Home on the Range**	*mus-wes-c AYC*
—	4	1	**Home Sweet Homicide**	*mys-mel A*
—	6	9	**Hoodlum Saint, The**	*mus-dr A*
—	3	5	**Hot Cargo**	*war-mel AYC*
—	2	6	**House of Horrors**	*cri-mel A*
2	1	—	**Hymn of the Nations**	*mus-doc AYC*
—	2	1	**If I'm Lucky**	*mus-com A*
—	2	3	**In Fast Company**	*mel AYC*
—	10	2	**In Old Sacramento**	*mus-wes AYC*

A	B	C		
—	5	6	**Inside Job**	*cri-mel A*
—	—	4	**Invisible Informer**	*cri-mel A*
—	9	1	**It Shouldn't Happen to a Dog**	*com AYC*
—	3	10	**Janie Gets Married**	*com AY*
—	5	4	**Joe Palooka, Champ**	*com AYC*
—	6	4	**Johnny Comes Flying Home**	*war-dr AYC*
3	5	2	**Journey Together**	*war-doc AY*
—	5	4	**Junior Prom**	*mus-com YC*
—	6	2	**Just Before the Dawn**	*cri-mys A*
1	13	1	**Kid from Brooklyn, The**	*mus-com-c AY*
1	6	—	**Killers, The**	*cri-mel A*
—	5	3	**Lady Luck**	*com A*
—	1	6	**Larceny in Her Heart**	*mys-mel AYC*
—	1	5	**Last Crooked Mile, The**	*cri-mel A*
3	5	7	**Leave Her to Heaven**	*dr-c A*
—	7	1	**Letter for Evie, A**	*war-com A*
—	7	4	**Little Giant**	*com A*
1	4	4	**Little Mr. Jim**	*dr A*
—	4	8	**Lover Come Back**	*com A*
7	8	1	**Make Mine Music**	*mus-car AYC*
1	4	—	**Man from Rainbow Valley**	*mus-wes-c AYC*
—	6	1	**Man Who Dared, The**	*cri-mel A*
—	8	10	**Masquerade in Mexico**	*mus-com A*
1	8	4	**Miss Susie Slagle's**	*dr AYC*
1	6	1	**Monsieur Beaucaire**	*mus-com A*
—	1	3	**Mr. Ace**	*dr A*
—	3	4	**Murder is My Business**	*cri-mel A*
1	4	—	**My Pal Trigger**	*mus-wes AYC*
—	5	3	**Mysterious Intruder**	*cri-mel A*
—	3	—	**Navajo Trail, The**	*wes AYC*
2	9	2	**Night and Day**	*mus-biog-c A*
—	3	4	**Night Editor**	*cri-mel A*
1	13	4	**Night in Casablanca, A**	*com A*
1	7	9	**Night in Paradise**	*fan-c A*
—	1	3	**Night Train to Memphis**	*mus-mel A*
—	3	—	**No Leave, No Love**	*mus-com AY*
7	6	—	**Notorious**	*mys-mel A*
—	10	4	**O.S.S.**	*war-mel A*
—	5	8	**Of Human Bondage**	*dr A*
—	2	4	**One Exciting Week**	*mus-com A*
—	5	7	**One More Tomorrow**	*dr A*
—	10	2	**Open City**	*war-dr A*
1	11	4	**Our Hearts Were Growing Up**	*com AY*
—	1	5	**Outlaw, The**	*wes A*
—	6	4	**Partners in Time**	*com AYC*
—	3	3	**Passkey to Danger**	*cri-mel A*
—	5	4	**Perilous Holiday**	*mus-com A*
—	2	5	**Personality Kid**	*com AYC*
—	—	5	**Phantom Thief, The**	*cri-mel A*
—	9	1	**Portrait of a Woman**	*dr A*
—	5	12	**Postman Always Rings Twice, The**	*cri-dr A*
—	1	4	**Postmaster's Daughter, The**	*nov A*
—	—	4	**Prairie Badmen**	*mus-wes AYC*
—	1	2	**Prairie Rustlers**	*wes AYC*
—	2	4	**Queen of Burlesque**	*mus-mel A*
—	6	1	**Rainbow Over Texas**	*mus-wes AYC*
—	5	3	**Rendezvous 24**	*mys-mel AYC*
—	4	—	**Rendezvous with Annie**	*war-com A*
—	10	3	**Renegades**	*mel-c A*
—	2	4	**Resistance**	*war-mel A*
—	3	2	**Return of Rusty**	*mel AYC*
2	13	2	**Road to Utopia**	*mus-com A*
—	3	3	**Roaring Rangers**	*wes AYC*
—	7	4	**Runaround, The**	*com AY*
—	5	7	**Scandal in Paris, A**	*cri-mel A*
—	6	9	**Scarlet Street**	*mel A*
1	6	9	**Searching Wind, The**	*war-dr A*
—	—	3	**Secrets of a Sorority Girl**	*cri-dr A*
5	11	—	**Seventh Veil, The**	*dr A*
—	3	2	**Shadow of a Woman**	*cri-mys A*
—	11	3	**She Wrote the Book**	*com A*
—	3	—	**Sheriff of Redwood Valley**	*wes AYC*
—	3	8	**She-Wolf of London**	*mys-mel A*
—	5	—	**Show-Off, The**	*com AYC*
—	—	4	**Sing While You Dance**	*mus-com AYC*
—	4	2	**Sirocco**	*dr A*
2	3	—	**Sister Kenny**	*biog AYC*
—	1	4	**Slightly Scandalous**	*mus-com AY*
3	11	1	**Smoky**	*mus-dr-c AYC*
—	3	5	**Smooth as Silk**	*cri-mel A*
—	13	4	**So Goes My Love**	*com AYC*
—	11	2	**Somewhere in the Night**	*cri-mel A*
—	4	3	**Song of Arizona**	*mus-wes AYC*
—	1	3	**Song of Mexico**	*mus-dr A*
—	—	3	**Song of Old Wyoming**	*mus-wes-c AYC*
—	2	8	**Specter of the Rose**	*dr A*
—	2	10	**Spider Woman Strikes Back, The**	*cri-mel A*
4	8	—	**Spiral Staircase, The**	*cri-mel A*
—	1	2	**Spook Busters**	*com AY*
—	—	4	**Stagecoach Outlaws**	*wes AYC*
—	1	5	**Step by Step**	*war-mel A*
—	11	5	**Stolen Life, A**	*dr A*
—	9	2	**Stormy Waters**	*dr A*
—	2	8	**Strange Confession**	*cri-mys A*
—	3	5	**Strange Conquest**	*dr A*
—	4	2	**Strange Impersonation**	*dr A*
—	10	5	**Strange Love of Martha Ivers, The**	*cri-mel A*
—	2	3	**Strange Mr. Gregory, The**	*cri-mel A*
—	3	7	**Strange Triangle**	*cri-mel A*
—	3	4	**Strange Voyage**	*adv A*
4	9	2	**Stranger, The**	*war-mel A*
—	4	—	**Sun Valley Cyclone**	*wes AYC*
—	3	4	**Sunset Pass**	*wes AYC*
2	9	6	**Suspense**	*mus-dr A*
—	2	7	**Swamp Fire**	*mel AYC*
—	—	5	**Symphonie d'Amour**	*mus A*
—	2	6	**Talk About a Lady**	*mus-com A*
—	3	11	**Tangier**	*war-mus-mel A*
—	11	3	**Tars and Spars**	*mus-com A*
—	2	8	**Ten Cents a Dance**	*mus-com A*
—	—	4	**Terrors on Horseback**	*wes AYC*
—	2	1	**That Texas Jamboree**	*mus-mel AYC*
—	7	7	**They Were Sisters**	*dr A*
—	9	4	**Three Strangers**	*mel A*
1	4	1	**Three Wise Fools**	*com AYC*
—	3	3	**Throw a Saddle on a Star**	*mus-wes A*
—	3	3	**Thunder Town**	*wes AYC*
2	8	6	**Till the End of Time**	*dr A*
1	3	1	**Time of Their Lives, The**	*com AYC*
3	10	2	**To Each His Own**	*war-dr A*
—	1	2	**Traffic in Crime**	*mel A*
—	2	1	**Trail of Kit Carson**	*wes AYC*
—	—	3	**Trouble Chasers**	*com A*
—	2	11	**Truth About Murder, The**	*mel A*
—	7	2	**Two Guys from Milwaukee**	*com AYC*
4	10	3	**Two Sisters from Boston**	*mus-com A*
—	3	5	**Two Smart People**	*cri-mel A*
—	2	1	**Two Years Before the Mast**	*adv AYC*
—	3	1	**Two-Fisted Stranger**	*wes AYC*
—	2	2	**Under Arizona Skies**	*mus-wes AYC*
—	3	3	**Undercover Woman, The**	*cri-mel A*
—	2	4	**Unknown, The**	*mys A*
1	13	1	**Vacation from Marriage**	*war-com A*
—	1	6	**Valley of the Zombies**	*cri-mel A*
1	11	3	**Virginian, The**	*wes-c AYC*
—	8	1	**Walls Came Tumbling Down, The**	*mys-mel AY*
1	8	3	**Well-Groomed Bride, The**	*war-com A*
—	—	4	**West of the Alamo**	*mus-wes AYC*
—	3	—	**Wicked Lady, The**	*dr A*
—	9	3	**Wife of Monte Cristo, The**	*adv AYC*
—	—	3	**Wild Beauty**	*dr AYC*
—	—	5	**Without Dowry**	*dr A*
—	9	3	**Without Reservations**	*com A*
—	7	2	**Yank in London, A**	*dr AY*
—	7	9	**Young Widow**	*war-dr A*
—	—	3	**Youth Aflame**	*dr A*
2	12	2	**Ziegfield Follies**	*mus-com-c A*

The Consumers' Observation Post

(Continued from page 4)

delivery" plan under which money was taken on an installment-payment basis, but no security was offered, nor was interest paid for the company's use of the money. Yet the contract provided that failure to make any payment as scheduled was to result in forfeiture of all moneys previously paid. Salesmen misrepresented the delivery date, which promised the utensils within thirty to sixty days, whereas the contract actually signed made no such representation. Consumers are advised to exercise extreme care in the purchase of stainless steel and other kitchenware sold by the "demonstration" method, to give no weight whatever to representations or promises of the salesman that do not appear in the contract, and above all to sign no contract which in case of non-fulfillment by the manufacturer or dealer, will leave the customer holding the bag, with doubtful legal redress.

* * *

SIMPLE BUT HELPFUL DIAGRAMS for attractive arrangement of furniture, good use of colors, and brief discussions of typical decorating problems will be found in an 8-page leaflet entitled Fundamentals of Interior Decoration, Circular Series H1.0, issued free of charge by The Small Homes Council, Mumford House, University of Illinois, Urbana, Ill.

* * *

THOSE WHO ARE CONSIDERING A POST-WAR HOME in the country will be interested in recent statistical data published by the Iowa State College in its agricultural journal, Iowa Farm Economist, in which it is shown that the death rate from a number of important ailments is one-third to one-half lower in rural districts than in cities of 2500 to 10,000 population and in most cases definitely less than in cities of 10,000 and over. (Diseases shown in this connection are heart disease; cancer, and other malignant tumors; intracranial lesions of vascular origin; disease of coronary arteries, angina pec-

Can Get a Copy of CR's New 1946 *Annual Cumulative Bulletin*

JUST OFF THE PRESS, the new 200-page ANNUAL CUMULATIVE BULLETIN for 1946-1947 was mailed the latter part of September to all forehanded subscribers who placed their orders in advance. The CUMULATIVE BULLETIN is not included in a subscription to the monthly issues, but is available as an "extra" to individual subscribers for their personal use at the special rate of $1.00 (Canada & foreign, $1.25). It may be subscribed for separately at $2.50.

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If you haven't already done so, we suggest that you use the handy blank on the next page to order your copy today!

toris; nephritis; influenza and pneumonia; tuberculosis; diabetes.) The rural death rate of infants is only one-half as great as that for cities of 2500 to 10,000. (The lowest infantile death rate outside rural areas is in the largest cities.) The one exception to the low incidence of severe illnesses in rural areas is in relation to undulant fever, a disease due to use of milk from infected animals. For this disease, the sickness rate was highest in farm areas, medium in rural non-farm areas, and lowest in urban areas (presumably due to better control of sanitary condition of milk in urban communities, during the period 1939-1943).

* * *

NEW PRODUCTS: Botany Lanolin Cream (Botany Worsted Mills, Passaic, N.J.) is what is sometimes referred to as "a good greasy cream." There are two creams; one called Botany Lanolin Triple Action Cream sells for $1 per 1-3/4-oz. jar (57¢ per oz.), plus tax; and Botany Lanolin Formula 70, $1.25 per 1-3/4-oz. jar (72¢ per oz.), plus tax. Essentially both products are perfumed lanolin and petrolatum. The Botany Lanolin Formula 70 was found to contain considerably more lanolin and considerably less petrolatum than the Triple Action Cream. Both will afford good skin lubrication, similar to that supplied by toilet lanolin, a product long recommended by CR for keeping the skin soft and helping to prevent it from becoming chapped and rough. The prices, however, for the Botany products are somewhat high and the claim made for the Triple Action Cream, "Cleanses and tones up dull tired skins," is not warranted.

Self-Polishing Simoniz is marketed as a thin, light tan-colored liquid self-polishing wax for floors. Upon analysis, this was found to be a water emulsion wax containing about 9% of mixed waxes, 2.5% of resins, 0.5% fatty acids, 0.3% of aqua ammonia, 0.4% borax, 0.1% caustic soda; the remainder was water. The waxes appear to be a mixture of about 60% carnauba and 40% paraffin wax. The ammonia and soda soap act as emulsifiers. Pine oil was present to give an odor.

Poly-Clene (The Poly-Clene Co., Elizabeth, N. J.; 50¢ for 8-oz. jar), a gray paste asserted "to clean and polish almost everything" was found on analysis to consist of about 39% water, with crystalline silica (a powdered quartz-like abrasive), 8%; bentonite (a colloidal clay used as a dispersing agent), 24%; calcium carbonate (chalk), 19%; sulfated oil (a "soapless detergent"), 5%; spindle oil (a lubricating oil of low viscosity), 6%.

Consumers' Research, Inc.
Washington, N. J.

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PHONOGRAPH RECORDS

By Walter F. Grueninger

Please Note: Prices quoted do not include taxes. In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C not recommended.

ORCHESTRA

Brahms: *Symphony No. 1.* Philharmonic-Symphony Orchestra of New York under Rodzinski. 10 sides, Columbia Set 621. $5.85. Monotonous treatment of a masterpiece. Falls short of Toscanini's drama in Victor Set 875. The recording, though wide-ranged, is limited in dynamics and lacks depth. The inner grooves of Side 3 waver in pitch.
Interpretation B
Fidelity of Recording A

Franck: *Symphony in D Minor.* Philadelphia Orchestra under Ormandy. 10 sides, Columbia Set 608. $5.85. Straightforward performance of a great symphony. The best of the competition, the remarkable Victor Set 840 (Monteux—San Francisco Symphony) is more dramatic and authoritative but the recording is harsher and not as wide-ranged though it is more than adequate.
Interpretation A
Fidelity of Recording AA

Tchaikovsky: *Nutcracker Suite.* Philharmonic-Symphony Orchestra of New York under Rodzinski. 6 sides, Columbia Set 627. $3.85. Rigid performance of charming ballet music. The recording would benefit by more detail and body. Preferable is the Ormandy-Philadelphia Victor Set 1020.
Interpretation A
Fidelity of Recording A

Six Dances. Philadelphia Orchestra Pops under Ormandy and Caston. 6 sides, Columbia Set 588 $3.85 Appealing music. Caston conducts the "Russian Sailors' Dance" and "Malazarte" and proves himself less able than Ormandy who conducts the "Dance of the Comedians," "Slavonic Dance No. 10," "Hungarian Dance No. 5," and an abbreviated "Wine, Women and Song." Wide-range recording but I would like more dynamic contrast. **Interpretation A**
Fidelity of Recording A

CONCERTO

Bach: *Concerto No. 1 in D Minor.* Eugene Istomin (piano) with the Busch Chamber Players under Adolf Busch. 6 sides, Columbia Set 624. $3.85. Bach originally wrote this outstanding work for violin and orchestra which Szigeti plays superbly in Columbia Set 418. Later Bach transcribed it for piano and orchestra as heard now in a well integrated performance marred by young Istomin's failure to plumb the depths as does Edwin Fischer in decade old Victor Set 252, adequately recorded. The piano in the new Columbia wide-range set occasionally sounds hollow but the orchestra is bright and the balance is excellent. **Interpretation A**
Fidelity of Recording A

INSTRUMENTAL

Prokofieff: *Sonata in D Major.* Szigeti (violin) Hambro (piano). 6 sides, Columbia Set 620. $3.85. Tuneful work performed first in this country by Szigeti in 1944. Definitive reading. The violin is very close to the microphone; the piano, relatively too distant, upsetting the balance.
Interpretation AA
Fidelity of Recording A

VOCAL

Burns-Chapple: *Auld Lang Syne* & **Lambert:** *When Johnny Comes Marching Home.* Baltimore and Ohio Glee Club. 2 sides, Decca 23455. 75c. A performance that need not have been recorded. **Interpretation C**
Fidelity of Recording B

Friml: *L'Amour, Toujours, L'Amour* & **MacMurrough:** *Macushla.* Jan Peerce (tenor). 2 sides, Majestic 1057. 75c. You know the songs. Peerce is a trifle operatic for this music, the orchestra is badly recorded, surfaces are noisy. Probably a repressing of a pre-war release under another label.
Interpretation A
Fidelity of Recording B

Harrison: *In the Gloaming* & Old English Air—*Drink to Me Only with Thine Eyes.* Robert Merrill (baritone). 2 sides, Victor 10-1218. 75c. America's fastest rising young baritone sings two ballads tastefully. Violin, harps, etc., as a background add a pretentious touch which is undesirable. Well recorded. **Interpretation A**
Fidelity of Recording AA

Mahler: *Songs of a Wayfarer.* Carol Brice (contralto) with the Pittsburgh Symphony Orchestra under Reiner. 4 sides, Columbia Set X 267. $2.85. Four sad songs, early Mahler, showing the beginning of his distinctive style. The set introduces the Negro contralto Carol Brice who impressed me favorably at her concert debut in New York City. Although her voice still requires more polish and color, the performance is quite satisfactory. Balance with orchestra, good.
Interpretation A
Fidelity of Recording AA

Nevin: *The Rosary* & **Bond:** *A Perfect Day.* Thomas L. Thomas (baritone). 2 sides, Victor 11-9190. $1. Two old favorites sung expressively. The roaming, accompanying string orchestra and the angelic choir, however, detract from the simplicity of these songs. Recorded expertly.
Interpretation A
Fidelity of Recording AA

Celebrated Operatic Arias. Bidu Sayao (soprano). 8 sides, Columbia Set 612. $4.85. Eight diversified arias sung in a way that calls for superlatives. Included are works by Mozart, Bellini, Puccini, Massenet, Gounod.
Interpretation AA
Fidelity of Recording AA

Russian Fair. Don Cossack Chorus under Serge Jaroff. 8 sides, Columbia Set 619. $4.85 New and familiar works. Expert performance, adequate recording Included are "Two Guitars," "Monotonously Rings the Little Bell," "Dark Eyes," "Snowstorm," etc. **Interpretation AA**
Fidelity of Recording A

LIGHT, FOLK, AND MISCELLANEOUS

Carmichael: *Star Dust* & **Gershwin:** *Summertime.* Eleanor Steber (soprano). 2 sides, Victor 11-9186. $1. Beautiful, full voice but styled for classic music. *Summertime* drags. First rate recording. **Interpretation A**
Fidelity of Recording AA

Kern: *All Through the Day* & **Gershwin:** *Where's My Bess?* James Melton (tenor). 2 sides, Victor 11-9224. $1. Neither song rises above the commonplace. Melton turns in one of his less than best performances but he is entitled to levity for the ramblings of the duo pianist accompanists are enough to upset anyone. Good balance. **Interpretation B**
Fidelity of Recording AA

Mercer-Arlen: *That Old Black Magic* & **Porter-Liszt:** *Liebestraum.* Spike Jones and His City Slickers. 2 sides, Victor 20-1895. 50c. Some of Spike Jones' humor is more spontaneous, but there are laughs in this one, too.
Interpretation AA
Fidelity of Recording AA

Moore: *Did You Ever Love a Woman* & **Jeffries-Leslie-Mills:** *I Left a Good Deal in Mobile.* Josh White (vocalist). 2 sides, Decca 23475. 75c. Interesting blues.
Interpretation A
Fidelity of Recording AA

Robinson-Linck: *The Glow Worm* & **Freed-Noble-Leleiohaku:** *Hawaiian War Chant.* Spike Jones and His City Slickers. 2 sides, Victor 20-1893. 50c. One of the wackiest discs we have had from Spike Jones. Recommended party record. **Interpretation AA**
Fidelity of Recording AA